

**THE EMERGENCE OF A NATIONAL  
COMMUNITY HEALTH WORKER PROGRAMME  
IN SOUTH AFRICA: DIMENSIONS OF  
GOVERNANCE & LEADERSHIP**

Helen Schneider

Thesis presented for the degree of  
Doctor of Philosophy  
in the School of Public Health and Family Medicine  
University of Cape Town

April 2017

The copyright of this thesis vests in the author. No quotation from it or information derived from it is to be published without full acknowledgement of the source. The thesis is to be used for private study or non-commercial research purposes only.

Published by the University of Cape Town (UCT) in terms of the non-exclusive license granted to UCT by the author.



# **THE EMERGENCE OF A NATIONAL COMMUNITY HEALTH WORKER PROGRAMME IN SOUTH AFRICA: DIMENSIONS OF GOVERNANCE & LEADERSHIP**

Helen Schneider

MBChB, DCH, DTMH, MMed

Thesis presented for the degree of  
Doctor of Philosophy  
in the School of Public Health and Family Medicine  
University of Cape Town

April 2017

Supervisor: Professor Diane McIntyre

This thesis is presented in fulfilment of the requirements for the degree of Doctor of Philosophy (PhD) in the School of Public Health and Family Medicine, Faculty of Health Sciences, University of Cape Town. The work on which this thesis is based is original research and has not, in whole or in part, been submitted for another degree at this or any other university. The contents of this thesis are entirely the work of the candidate, or in the case of multi-authored published papers, constitutes work for which the candidate was the lead author. The contribution of the candidate to the papers is further delineated in the introduction to each included paper as appropriate.

Helen Schneider

April 2017

## **Abstract**

National community health worker programmes are returning to favour across the globe. While such programmes expand access and deepen community engagement in health, they require considerable resources and support to sustain. This thesis seeks to enhance understanding of the system-wide changes and governance and leadership required to implement community health worker programmes at scale. Empirically, it examines the implementation of a community-based delivery strategy, referred to as Primary Health Care Ward Based Outreach Teams (hereafter referred to as outreach teams), adopted in South Africa since 2011. These outreach teams are reconfiguring a community-based care and support sector that evolved organically in response to HIV, towards a comprehensive approach, integrated into the primary health care system. Located within the field of health policy and systems research and using multi-method (document reviews, interviews, observations) case study research, the thesis describes the evolution of community-based services in South Africa and analyses the system-level challenges and approaches to early implementation of the outreach teams in two provinces (Western Cape, North West). These case studies highlight the diverse and context specific ways in which the strategy emerged at sub-national level, as a negotiated product of local histories of community-based services and new mandates from the top. Drawing on an additional case study in a third province (Gauteng), a cross case analysis inductively identified the challenges facing, and the strategies adopted, by provincial and district managers in implementing the new strategy. It shows how implementation of community health worker programmes is far from linear, and the multifaceted and distributed nature of governance and leadership required, spanning analytic, managerial, technical and political roles. The thesis concludes by proposing a multilevel governance and leadership framework for community health worker programmes at scale. Through this lens it adds understanding to the governance and leadership function in health systems more generally. The thesis is presented as papers embedded in a narrative that includes an introduction, literature review, methodology and synthesis discussion. Four papers (3 published and 1 forthcoming) form the basis of the results chapter, with extracts of a further two published papers integrated into the narrative.

## Acknowledgements

The decision to do this PhD was made when most people would prioritise retirement planning rather than a higher degree. It followed several years of prevarication, prompted in part by the anomaly of being a professor without a PhD. However, at some point it became less about meeting institutional obligations than an opportunity to engage in a “soul” project, to develop a set of ideas with a greater degree of persistence and depth than I would have normally done. I want to thank the following for making this journey possible:

- Di McIntyre, who agreed to supervise me and exercised the perfect balance of patience, direction and encouragement required;
- The Collaboration for Health System Analysis and Innovation (CHESAI), a joint UCT/UWC project led by Lucy Gilson and Uta Lehmann, for providing the many opportunities and a rich intellectual space for thinking on governance and leadership, and health policy and systems research more generally;
- My colleagues and students at UWC’s School of Public Health – they are too numerous to name - for their ongoing support and capacity to inspire and energise;
- Jose Frantz, Dean of the UWC Faculty of Community and Health Sciences, for approving time out to advance the thesis at critical moments;
- The many collaborators – at UCT, Stellenbosch, Wits, Health Systems Trust, Public Health Foundation of India, Antwerp Institute of Tropical Medicine, amongst others – who in one way or another contributed to the content and ideas in the thesis;
- The community health workers, frontline providers, community-based organisations and the sub-district, district and provincial managers and policy makers in provincial health departments whose willingness to share their experiences and knowledge ultimately made possible this PhD;
- My family and friends – in particular, Lucy, Margie, Megan, Rosa and Slo - who accompanied me along the way.

## Preface

In 1992, in a public health specialist exam we were asked to write an essay on the following question: Should South Africa adopt a national community health worker programme? At the time, I was entirely unsure. I debated the famous distinction between “lackey” or “liberator” described by the writer, David Werner, showing awareness of the failures of hastily introduced national schemes across the globe, while at the same time drawing on my knowledge of a number of successful local and regional experiments in South Africa. In the end my views did not matter: the first Minister of Health in the newly elected democratic government in 1994, although strongly in favour of strengthening primary health care, was firmly opposed to a CHW programme that might be viewed as promoting second class care for second class citizens. However, over the course of the decade that followed, South Africa’s health system, its citizens and the body politic as a whole were confronted with a devastating epidemic of death and dying caused by HIV/AIDS. The care and other needs generated by HIV/AIDS led to the rapid, bottom up mobilisation and growth of a lay health worker presence in the health system, and a de facto community health worker programme in South Africa. With a longstanding interest in primary health care systems, I was intrigued by this evolution, what it represented, the attitudes of government towards it, and what might be enabling policy responses, if any, for this new community-based sector. In 2000, I received the first commission to conduct a rapid appraisal of home and community based care programmes in South Africa<sup>1</sup>. Since then I have maintained a professional thread of research, evaluation and technical support in community-based health services. I have been particularly interested in how the responses to HIV/AIDS have influenced the overall shape and direction of health systems and how disease-specific, vertical strategies interface with more general health systems approaches and ideas such as comprehensive primary health care. This PhD addresses recent developments in the South Africa’s community-based health sector, in an era of “mainstreaming” and post AIDS exceptionalism. It focuses specifically on what is required from the state to govern this sector, as it seeks to formalise its status and harness its potential more widely, a feature it shares with many health systems in the region and beyond.

---

<sup>1</sup> Russel M and Schneider H. 2000. A Rapid Appraisal of Community-Based HIV/AIDS Care and Support Programs in South Africa. Health Systems Trust/Center for Health Policy, University of Witwatersrand, Johannesburg, South Africa

## Abbreviations

APEs	Agentes Polivalentes Elementares
ART	Antiretroviral Therapy
ASHA	Accredited Social Health Activist
BRICS	Brazil, Russia, India, China, South Africa
CHW	Community Health Worker
cIMCI	Community Integrated Management of Childhood Illness
DOTS	Directly Observed Treatment Short Course
FLHW	Frontline Health Worker
HPSR	Health Policy and Systems Research
iCCM	Integrated Community Case Management
LMICs	Low- and Middle-Income Countries
MCH	Maternal-Child Health
MDGs	Millennium Development Goals
NGO	Non-Governmental Organisation
NHI	National Health Insurance
NPO	Non-Profit Organisation
PHC	Primary Health Care
SDGs	Sustainable Development Goals
TDE	Theory Driven Evaluation
UHC	Universal Health Coverage
WBOT	Ward Based Primary Health Care Outreach Teams
WHO	World Health Organization



## Table of Contents

Abstract.....	i
Acknowledgements.....	ii
Preface.....	iii
Abbreviations.....	iv
Table of Contents.....	v
List of tables.....	vii
List of figures.....	vii
Chapter 1: Introduction.....	1
Ward Based Primary Health Care Outreach Team Strategy in South Africa.....	1
Global development of national CHW programmes.....	5
The role of governance and leadership.....	7
Problem statement.....	8
Purpose.....	9
Provincial research settings.....	9
Research Question, Aim and Objectives.....	10
Papers embedded in the thesis.....	11
Structure of the remaining sections of the thesis.....	12
Chapter 2: Literature review.....	14
Introduction.....	14
South Africa in the context of the global pendulum swing towards CHWs.....	14
A systems perspective on CHW programmes.....	19
Empirical evidence on systems aspects of CHW programmes.....	22
Health System Governance.....	27
The governance and leadership of CHW programmes.....	34
Chapter 3: Methods.....	37
Introduction.....	37
Epistemological starting points.....	37
Embedded country researcher.....	40
Study design and data collection: the case study method.....	44
Chapter 4: Results in the form of published papers.....	49
Paper 1.....	49
Paper 2.....	50
Paper 3.....	52
Paper 4.....	53
Chapter 5: Discussion, conclusions and recommendations.....	82
Contribution of the thesis.....	82

A multilevel framework for the governance and leadership of national CHW programmes .....	89
Assumptions and limitations.....	93
Conclusions and recommendations.....	94
References .....	97
Annexures 1 & 2: Papers 5 & 6.....	115
Annexure 3: Scoping review methodology .....	116

## List of tables

Table 1: Coverage of wards with reconfigured WBOTs.....	5
Table 2: Socio-demographic and political contexts of study provinces .....	10
Table 3: Mapping of core papers across the thesis objectives .....	12
Table 4: Profiles of publications on CHWs in LMICs, 2005-2014 .....	16
Table 5: Programmatic orientation of publications .....	18
Table 6: Key characteristics of CHW programmes .....	26
Table 7: Health System Leadership and Governance sub-functions .....	29
Table 8: The Multiple Governance Framework.....	33
Table 9: Research priorities for iCCM – global health vs country perspectives .....	41
Table 10: Provincial context and data collection.....	46
Table 11: Distributed governance in South Africa’s WBOT strategy.....	86
Table 12: A multilevel framework for the governance and leadership of national CHW programmes .....	92

## List of figures

Figure 1: Numbers of indexed publications on CHWs 2005-2014 (n=678) .....	15
Figure 2: Regional profile of programmatic orientations in comparison with South Africa .....	17
Figure 3: WHO Building Blocks framework of a health system .....	20
Figure 4: CHW programmes as a system .....	20
Figure 5: Health Governance Framework.....	30
Figure 6: Key ideas and concepts in the governance and leadership of national CHW programmes .....	36
Figure 7: Case Study Strategy .....	45

## **Chapter 1: Introduction**

This introductory chapter provides an overview of the emergence of a community-based health sector in response to HIV in South Africa over the last two decades. It describes the Ward Based Outreach Team Strategy as an attempt by government to formalise this sector into a national community health worker (CHW) programme, placing these developments in the international context of a global pendulum swing back towards CHW programmes. It then highlights the particular contribution of this thesis in advancing knowledge on CHW programmes at scale and presents the problem statement and thesis aim and objectives. The chapter concludes by outlining the structure of the thesis in the form of papers embedded in a literature review and a crosscutting discussion of research presented in this thesis.

### **Ward Based Primary Health Care Outreach Team Strategy in South Africa**

As has now been noted by many, the Millennium Development Goal (MDG) era saw a global resurgence of interest in the role of CHWs in health systems, an interest that is set to continue into the era of the Sustainable Development Goals (SDGs) (Campbell et al. 2015). Countries that made the most progress towards the MDGs have invested heavily in strategies that engage households and communities directly as part of primary health care (PHC) (Balabanova et al. 2013). An expanding list of countries with large-scale and stable CHW programmes, and a growing evidence base on the effectiveness of CHWs in achieving specific health outcomes (Lewin et al. 2010), have brought renewed global confidence in CHWs. Further, through the popularisation of the concept of “task shifting”, the involvement of lay and community health workers has emerged as a rational strategy for addressing the vast shortfall in human resources impeding roll out of programmes in many countries. A number of significant international consensus statements have recommended that CHW programmes be integrated into health systems, increasingly linking these to the concept of Universal Health Coverage (UHC) (Third Global Forum on HRH 2013a).

Against this recent international context, South Africa has sought to formulate its own national CHW policy and programme, the subject of this thesis.

In 2010, the national Minister of Health in South Africa appointed a task team to prepare a discussion document on the “Re-engineering” of PHC in South Africa’s health system (National Department of Health 2010). This document proposed a renewed focus on district health and PHC systems, and specifically recommended the establishment of “Ward Based Primary Health Care Outreach Teams” (henceforth abbreviated as WBOTs or outreach teams or the WBOT strategy). The WBOTs were subsequently elaborated as one of four key “streams” of PHC re-engineering with school health services, the appointment of District Maternal Child Health Clinical Specialist Teams and public sector contracting of private general practitioners (Pillay & Barron 2011; Pillay 2012).

The WBOT strategy seeks to reshape, to new goals, a dense community-based “economy of care” (Ogden et al. 2006) that emerged organically in South Africa over the last two decades, largely around the response to HIV and TB. With financial support from government and donors, a diverse array of non-governmental organisation (NGO)-based lay health workers were recruited to provide care, support and counselling in health facilities, homes and communities. In 2011, a government audit counted 72,000 such workers across the country, employed through 2,963 non-profit organisations (NPOs), many in a semi-formal relationship with the health system (National Department of Health 2011a).

The WBOT strategy aims to formalise, standardise and integrate the existing community-based services within the PHC system. It envisages that a team of generalist community health workers (CHWs), led and supported by a professional nurse and working in close collaboration with environmental health officers and health promoters, will be responsible for a defined number of households and will form close links with the local health facility. The role of these teams will include, but extend beyond HIV/TB to include maternal-child health and chronic non-communicable diseases, and will have a strong preventive/promotive focus. The allocation along ward (the lowest political unit) lines follows the lead of one of the provinces, KwaZulu-Natal, where health teams collaborate with other sectors in local government development initiatives. The PHC Re-engineering Discussion Document also proposed that the WBOTs become absorbed into the civil service, alongside a residual NGO-based care and support system.

The WBOT strategy is yet to be formally adopted as policy but features prominently, along with other aspects of PHC Re-engineering, in other significant policy statements such as the White Paper for National Health Insurance (NHI), where PHC is described as “the heartbeat” of NHI (National Department of Health 2015). Although mandated nationally, adopted by the National Health Council (the highest decision-making body in the health sector) and officially launched in the nine provinces in 2011, there have been no new additional resources devoted to the implementation of WBOTs.

This combination of features – a definite mandate, but as yet no formal policy or additional resources – suggests policy ambiguity towards CHWs, a hesitancy which has a longer history in South Africa’s post-apartheid health system.

Following the advent of democracy in 1994, PHC received high priority, but it coincided with a period of global scepticism towards national CHW schemes, and CHWs did not feature as part of new health sector policy (Schneider et al. 2008). Over the course of the decade that followed, however, the need to respond to an overwhelming HIV epidemic led to the mobilisation of a large and diverse lay health workforce. The new cadres included facility-based lay counsellors (providing HIV counselling and testing), home-based carers (providing end of life care), TB “DOTS supporters” (providing directly observed treatment), care for vulnerable children, adherence supporters (for antiretroviral treatment), community educators and advocates. Recognising their key roles and their presence as a de facto labour force, government initiated a system of NPO-based contracting for provision of community-based services from 2000 onwards. In the years that followed, a number of policy initiatives and statements sought to regularise the community-based sector and the status of community care workers, culminating in the WBOT strategy in 2010.

The adoption of the WBOT strategy followed growing pressures from an active and organised HIV/AIDS civil society sector in the South African National AIDS Council. While increasingly dependent on lay health workers to provide HIV/AIDS and TB services, their precarious status and working conditions, low remuneration and poorly managed NPO contracts resulted in frequent service interruptions. This led to calls for a formalised community health worker programme and incorporation into state

employment.<sup>2</sup> Simultaneously, criticism of South Africa's failure to meet the MDGs, and a ministerial visit and exposure to the successful Brazilian Family Health Programme, provided the templates for reorganising the community-based sector in South Africa. The concept of the PHC outreach teams emerged out of these processes.

Since it was launched in 2011, the role of the national Department of Health in furthering the implementation of the WBOT strategy has consisted of 1) defining roles, scopes of practice and competencies for the outreach teams, which would cover HIV/TB, maternal child health and non-communicable diseases (NCDs) 2) the development and funding of training for CHWs and outreach team leaders, 3) formulation of a one-year occupational training curriculum for CHWs through a national accreditation body, the Quality Council on Trades and Occupations, and 4) the development of a national monitoring and evaluation system linked to the core District Health Information System (National Department of Health 2011b).

In the absence of ring-fenced (dedicated) funding and formal policy, however, the implementation of PHC outreach teams has been highly variable across the country. Two provinces, KwaZulu-Natal and Western Cape, declared that they were not going to take up the national training and by implication follow the national blueprints. In other provinces, notably the North West, uptake was immediate and more enthusiastic. By December 2015, just over one third (36.4%) of electoral wards had at least one WBOT reporting data through the national District Health Information System, with North West Province having the highest number and coverage with teams (Table 1 below). The work of WBOTs has gravitated towards two key programmatic foci: follow-up and support of chronic lifelong conditions (including HIV/TB and NCDs), and maternal, child and reproductive health (Mampe et al. 2016).

In a quasi-federal system such as South Africa, provincial structures have some degree of autonomy in relation to new national policy initiatives, especially when these are not legislated or are handed down as so-called unfunded mandates. The lack of funding to support implementation of the WBOTs in an already precarious and underfunded service delivery platform has been a major constraint to policy implementation. On the other

---

<sup>2</sup> See for example "We demand the integration of Community Health Care Workers (CCWs) into the health system!" <http://section27.org.za/2010/10/meeting-challenges-of-hiv/> [accessed 26 April 2017]

hand, it has allowed provinces to implement (or not) the ideas in the ways they consider appropriate to their own settings, creating opportunities for variable assimilation and experimentation. In the meantime, the status of CHWs in the health system remains a source of considerable dissatisfaction and contestation across the country.<sup>3</sup>

**Table 1: Coverage of wards with reconfigured WBOTs**  
(Reproduced from: National Department of Health (2016: 61))

Province	Wards with WBOTs	# Wards	% wards with WBOTs
Eastern Cape	401	715	56.1
Free State	95	317	30.0
Gauteng	277	507	54.6
KwaZulu-Natal	131	828	15.8
Limpopo	231	543	42.5
Mpumalanga	61	402	15.2
North West	278	383	72.6
Northern Cape	81	194	41.8
Western Cape*	-	387	-
Total	1,555	4,276	36.4

\* Not reporting data

The Western Cape, while not initially adopting national policy (and not reporting data), has placed the restructuring of community-based services into ward-based teams at the core of its new Health Care 2030 Strategy; the North West has presented the WBOTs as a logical extension of a long-established emphasis on the district health system and PHC in the province; and in Gauteng, weak provincial stewardship has resulted in the development of a number of novel district experiments by entrepreneurial actors. Each of these cases, described in the papers in this thesis, offers insights into design choices and implementation processes that have relevance for thinking about the leadership and governance challenges of CHW programmes in South Africa and elsewhere.

### **Global development of national CHW programmes**

South Africa is not alone in seeking to formalise or strengthen its community-based health sector. On the African continent, Mozambique is in the process of revitalising its programme of *Agentes Polivalentes Elementares* (APEs) (Bennett et al. 2014), Zambia has

<sup>3</sup> See, for example: <http://section27.org.za/tag/section27-community-health-workers> [accessed 25 April 2017]



developed a Community Health Assistants strategy (Zulu et al. 2013), Ethiopia introduced Health Extension Workers (Perry et al. 2014a), and Rwanda has implemented community-based teams across the country (Condo et al. 2014). In Asia, India introduced the national Accredited Social Health Activist (ASHA) Programme in 2005, which by 2012 had been scaled up across the country to nearly 1 million workers (Sundararaman et al. 2012).

These national initiatives, especially on the African continent, have emerged in the context of a plethora of donor-driven and disease-specific interventions in the community-based sector. From the mid 1990s there was a rapid growth of community-based HIV care (Celletti et al. 2010), especially in southern Africa, followed by investments in HIV treatment programmes. In parallel, global strategies around the community case management of malaria and childhood illness have placed heavy emphasis on the role of CHWs. Established national CHW programmes – such as in Brazil, Nepal, Pakistan, Malawi and Iran – have also been championed by groups such as Global Health Workforce Alliance (Bhutta et al. 2010).

As alluded to earlier, these new global agendas occur on the back of long-standing experiences with national CHW programmes. Following the Alma Ata Declaration of PHC in 1978, countries enthusiastically adopted and then, in many instances, summarily disbanded their CHW programmes. A number of studies of CHW programmes at the time documented the reasons for this – loss of effectiveness as programmes expanded, with inadequate support systems, insufficient resourcing and poor integration with the formal health system (Berman et al. 1987; Walt et al. 1989; Gilson et al. 1989). This led to questions such as: community health workers: head start or false start? (Berman et al. 1987), and are large-scale volunteer community health worker programmes feasible? (Walt et al. 1989). In a later review of global experiences with CHW programmes in 2007, Lehmann and Sanders (2007:v) concluded that they held considerable potential but were “not a panacea for weak health systems nor a cheap option to provide access for underserved population” and that the “effort and input required to make them work” was generally underestimated.

While mindful of the previous era of failed national experiments, the last few years have seen a number of high profile reviews (Bhutta et al. 2010; Earth Institute 2011) and

meetings calling for the implementation of CHW programmes at scale. The Third Global Forum on Human Resources for Health (convened by the Global Health Workforce Alliance in Brazil) in November 2013 held a special session on CHWs and other frontline health workers (FLHWs) where it concluded that “CHWs and other FLHWs play a unique role and can be essential to accelerating MDGs and achieving UHC” (Third Global Forum on HRH 2013b:5). However, it also described the crowded, fragmented and uncoordinated reality existing in many countries:

“Experience from most countries shows fragmentation, overcrowding, duplication and gaps at the frontline level of the health system, underscoring the need for better coordination and synergies across partner initiatives and increased alignment with national plans. Many countries and partners have not given adequate attention to ensuring approaches that integrate the different types of community health workers and volunteers with the national health system, with stronger interface between that system and the community, CSOs, NGOs and the private sector.” (Ibid:4)

### **The role of governance and leadership<sup>4</sup>**

Responding to global calls, such as that of the Global Forum, for alignment with national plans, integration into the health system and coordination, necessitates a greater focus on stewardship by government at all levels – at national level to define policy, at sub-national level to develop integrated systems, and at local level to manage the interfaces between the complex array of actors involved. This thesis seeks to shed light on the stewardship of CHW programmes at scale. This function is also referred to as “leadership and governance” in the World Health Organization’s (WHO) “building blocks” framework on health systems, where it is defined as “overseeing and guiding the whole system, public and private, in order to protect the public interest” (WHO 2007:23). Adopting a somewhat broader perspective, Caulfield and Hort (2012) refer to health system governance not so much as functions than as the underlying properties of organisations: “... the set of rules both formal and informal that governs the behaviour and allocates roles and responsibilities to actors in the system” (2012:1).

---

<sup>4</sup> Note: WHO’s building block framework refers to “leadership and governance”, many others refer to “governance” alone, and some to “stewardship”. This thesis refers to “governance and leadership”, referencing WHO’s language but also signalling a broad and inclusive, rather than specific approach to this function.

Because of their location at the interface between formal systems and communities, and the dual identities of the players involved as belonging to both (Mlotshwa et al. 2015), the governance of CHW programmes has been described as “complex and relational” (Lewin & Lehmann 2014).

## **Problem statement**

Although South Africa is a middle-income country not dependent on donor funds, it shares with other low- and middle-income countries (LMICs) the recent emergence of a community-based sector, provided mainly through non-governmental intermediaries, which is disease- or function- (e.g. care) specific, fragmented and poorly-integrated into the PHC system. Efforts in South Africa, as elsewhere, to shape this plural and diverse community-based sector into a comprehensive and formal national CHW programme have to build on this reality. Doing so requires “adapting a systems perspective to the national and local contexts” (Perry et al. 2014a:viii) and active governance and leadership at all levels.

Much of the contemporary research on CHWs is focused on the feasibility and impacts of specific CHW-delivered health interventions (such as integrated community case management of childhood illness). Although systems-related challenges to the delivery of these interventions at scale – such as supervision and support, supplies, and monitoring and evaluation systems – are receiving growing attention, there is relatively little literature taking a “whole system”, macro perspective on the redesign and implementation of national CHW programmes.

National CHW programmes, as this thesis will argue, are complex interventions interfacing with national health systems that are themselves complex (De Savigny & Adam 2009; Paina & Peters 2012). Successfully implementing CHW programmes requires mobilising a number of sub-systems, actors and interfaces simultaneously, and is unlikely to proceed in a linear and predictable fashion. A whole system approach considers the intervention, the system building blocks (“hardware”) and system relationships (“software”) together is thus necessary for understanding the challenges to

implementation of CHW programmes at scale (Sheikh et al. 2011). For policy makers and managers who do not have the luxury of focusing on one dimension and have to hold “360 degree” perspectives, holistic approaches are important.

Although the governance and leadership function forms one of the main building blocks of the WHO model of health systems and is recognised as crucial to the functioning of the rest of the system, it is seldom seen as the worthy object of research. It thus remains conceptually opaque and empirically poorly characterised, in CHW programmes and in health systems more generally.

## **Purpose**

This thesis seeks to enhance understanding of the system-wide changes and governance and leadership roles required in developing comprehensive and integrated national CHW programmes out of a diverse and plural community-based sector. Empirically it is based on case studies and a cross case analysis of sub-national implementation of the PHC Ward Based Outreach Team Strategy in three South African provinces (Western Cape, North West, Gauteng) conducted between 2012 and 2013.

The thesis is presented as a series of four publications (three published and one accepted for publication), embedded in a literature review and discussion, which make use of extracts from a further two papers (published and provided as annexures).

## **Provincial research settings**

As explained in the methodology chapter, the three provincial case studies reported in this thesis all had the same research purpose, but were conducted separately, by different (if overlapping and connected) teams, and with different scopes. The selection of the three particular provinces (out of the nine in the country) was in part purposeful and in part because of established relationships with provincial authorities. In the course of the research it became clear they represented a sufficiently diverse (if not the full) range of provincial socio-economic, political and policy contexts to allow for an appraisal of sub-national implementation and governance dynamics.

Gauteng is the urban industrial heartland of South Africa, reflected in its population size and per capita gross domestic product (GDP) (Table 2). The Western Cape, also a wealthier province, is characterized by a long-standing legacy of privilege, and it fares better on almost all metrics of health system performance and outcomes. It is the only province in South Africa governed politically by a party other than the ruling African National Congress, and has a tradition of asserting autonomy towards the national level, in both bureaucratic and political spheres. The North West Province is a more rural, traditional and less politically diverse province, and as alluded to earlier, was an early adopter of the WBOT Strategy.

**Table 2: Socio-demographic and political contexts of study provinces**

Province	North West	Western Cape	Gauteng
Population	3.7 million mostly rural	6.2 million mixed urban/rural; one metropolitan municipality	13 million mostly urban; contains 3 metropolitan municipalities
Per capita GDP (US\$ 2010)*	6,700	8,700	9,700
Political context	African National Congress dominant political formation alongside traditional authorities	Only province governed by an opposition party, including metro (Democratic Alliance)	A mix of African National Congress at provincial level; and coalitions of opposition parties in the metros

\* Source:

[https://en.wikipedia.org/wiki/List\\_of\\_South\\_African\\_provinces\\_by\\_gross\\_domestic\\_product\\_per\\_capita](https://en.wikipedia.org/wiki/List_of_South_African_provinces_by_gross_domestic_product_per_capita)

## **Research Question, Aim and Objectives**

This thesis asks the following research question: How was the Ward Based Outreach Team strategy in South Africa adopted and implemented at sub-national level and what does this offer for an understanding of the governance and leadership of CHW programmes delivered at scale in national health systems?

The aim of this thesis is to describe and evaluate the adoption and early implementation of the Ward Based Outreach Team strategy in South Africa at sub-national level, and

from this, to identify the governance and leadership roles required to support the development of CHW programmes at scale in national health systems.

The objectives are to:

1. Describe the emergence of a community-based health sector based on lay health work as a response to the HIV epidemic in South Africa;
2. Examine the implications of a care-oriented and disease-specific community-based sector for the adoption of the WBOT strategy as a comprehensive CHW programme, integrated into the PHC system;
3. Evaluate provincial contexts and strategies enabling successful adoption and implementation of the WBOT strategy;
4. Propose key roles for the governance and leadership of CHW programmes that draw on diverse provincial contexts and experiences with WBOTs adoption and implementation;
5. On the basis of the South African experience, propose a framework for the multilevel governance and leadership of CHW programmes integrated into national health systems.

### **Papers embedded in the thesis**

The above objectives are addressed in four papers, embedded in the thesis:

1. Schneider H, Lehmann U. Lay health workers and HIV programmes: implications for health systems. *AIDS Care* 2010; 22 (Suppl 1):60-7.
2. Schneider H, Schaay N, Dudley L, Goliath C, Qukula, T. The challenges of reshaping disease specific and care oriented community based services towards comprehensive goals: A situation appraisal in the Western Cape Province, South Africa. *BMC Health Services Research*. 2015; 15(1): 436
3. Schneider H, English R, Tabana H, Padayachee T, Orgill M. Whole-system change: case study of factors facilitating early implementation of a primary health care reform in a South African province. *BMC Health Services Research*. 2014; 14 (1):609.

4. Schneider H, Nxumalo N. Leadership and governance of community health worker programmes at scale: a cross case analysis of provincial implementation in South Africa. Forthcoming: International Journal for Equity in Health.

Table 3, below, maps the contribution of the four core papers to the five objectives of the thesis.

**Table 3: Mapping of core papers across the thesis objectives**

	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5
Paper 1	X	X			
Paper 2		X		X	X
Paper 3			X	X	X
Paper 4				X	X

Verbatim extracts of the following publications have been included in the literature review and discussion, with permission of the supervisor.

5. Schneider H, Okello D, Lehmann U. The global pendulum swing towards community health workers in low- and middle-income countries: a scoping review of trends, geographical distribution and programmatic orientations, 2005 to 2014. Human Resources for Health. 2016; 14:65
6. Schneider H, Lehmann U. From Community Health Workers to Community Health Systems: Time to Widen the Horizon? Health Systems & Reform 2016; 2(2):112–118.

The Doctoral and Degrees Board of the University of Cape Town has approved inclusion of the papers in the PhD and is satisfied that they overwhelmingly represent the scientific work of the candidate.

### **Structure of the remaining sections of the thesis**

Chapter 2: Literature review, addresses three key themes:

- A description of the pendulum swing to community health workers in LMICs
- The literature providing a systems perspective on CHW programmes
- Concepts and frameworks of governance

Chapter 3: Methods, focuses on the epistemological stance of the candidate, informed by a positioning as an “embedded country researcher”. The main research strategy (case study) and data collection methods are also described.

Chapter 4: Results, introduces each paper, its contribution to the thesis as a whole and the role of the candidate in each, followed by the paper itself.

Chapter 5: Discussion, summarises the contribution of the thesis to knowledge on CHW programmes at scale, and proposes a multilevel framework for CHW programme governance and leadership. Finally, the chapter considers the limitations of the analysis and makes recommendations for further research and practice.



## **Chapter 2: Literature review**

### **Introduction**

There are several key themes running through this thesis. First, that the emergence of a CHW programme in South Africa forms part of a global pendulum swing back towards CHWs in the health systems of LMICs in recent years. Second, when thinking of national CHW programmes, a systems perspective is required. Third, that the governance and leadership of CHW programmes is a key but neglected dimension of research on CHW programmes.

While seeking to avoid repeating the literature in the individual papers (although some overlap is inevitable), this review addresses each of these three themes. The first section provides empirical evidence, based on a scoping review of indexed publications over a ten-year period, of the pendulum swing back towards CHW programmes in LMICs; and locates South Africa in these global developments. The second section examines in more detail the extent to which a health policy and systems perspective is present in the literature on CHWs, followed by a specific focus on literature addressing CHW programme governance and leadership. The third section is more theoretical in nature, reviewing the literature on health system governance, and laying the conceptual basis for the framework of multilevel governance and leadership of national CHW programmes in the discussion section.

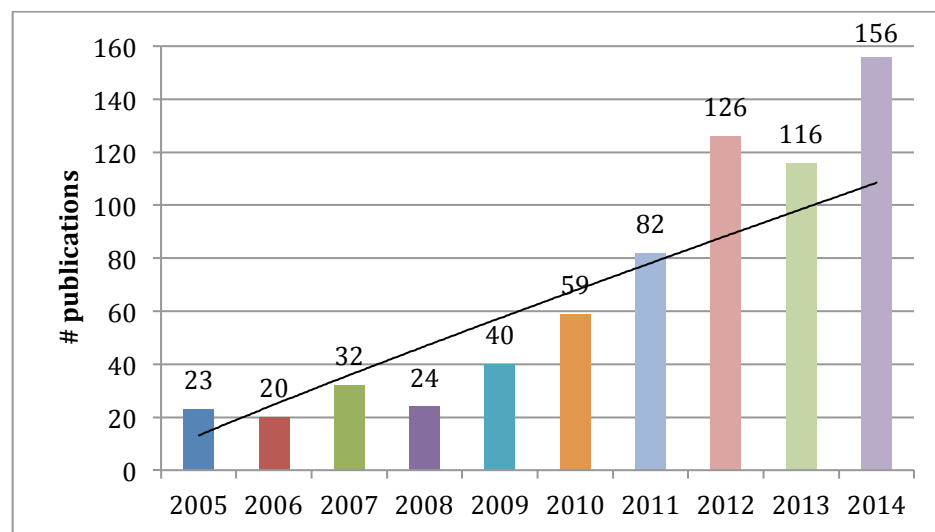
### **South Africa in the context of the global pendulum swing towards CHWs**

The introduction situated the development of ward-based outreach teams in South Africa as part of a global return to CHW programmes in national health systems of LMICs. In order to document this, the candidate conducted a quantitative scoping review of trends in publications on CHWs over a ten-year period.<sup>5</sup> A scoping review aims to “map the existing literature in a field of interest in terms of the volume, nature and characteristics of the primary research” (Pham et al. 2014:371). The review examined trends in publications, their distribution across countries and regions, and programmatic

---

<sup>5</sup> The scoping review has not been included in full as it is only partially oriented to the core aim and objectives of this thesis. It is appended in Annexure 1 and the methodology summarised in Annexure 3.

orientations. It identified a seven-fold increase in the annual number of indexed publications in English on CHWs over the ten-year period from 2005 to 2014 (Figure 1).



**Figure 1: Numbers of indexed publications on CHWs 2005-2014 (n=678)**

Of the 678 papers inventoried in the scoping review, half came from the Africa Region, just under a third from the Asia/Pacific Region, and 11% from the Americas. The papers reported experiences in 46 countries, with 17 countries contributing at least 10 publications each, amongst them the globally recognised CHW programmes (Table 4). South Africa, together with two other middle-income countries – India and Brazil – contributed 30% of the total number of publications.

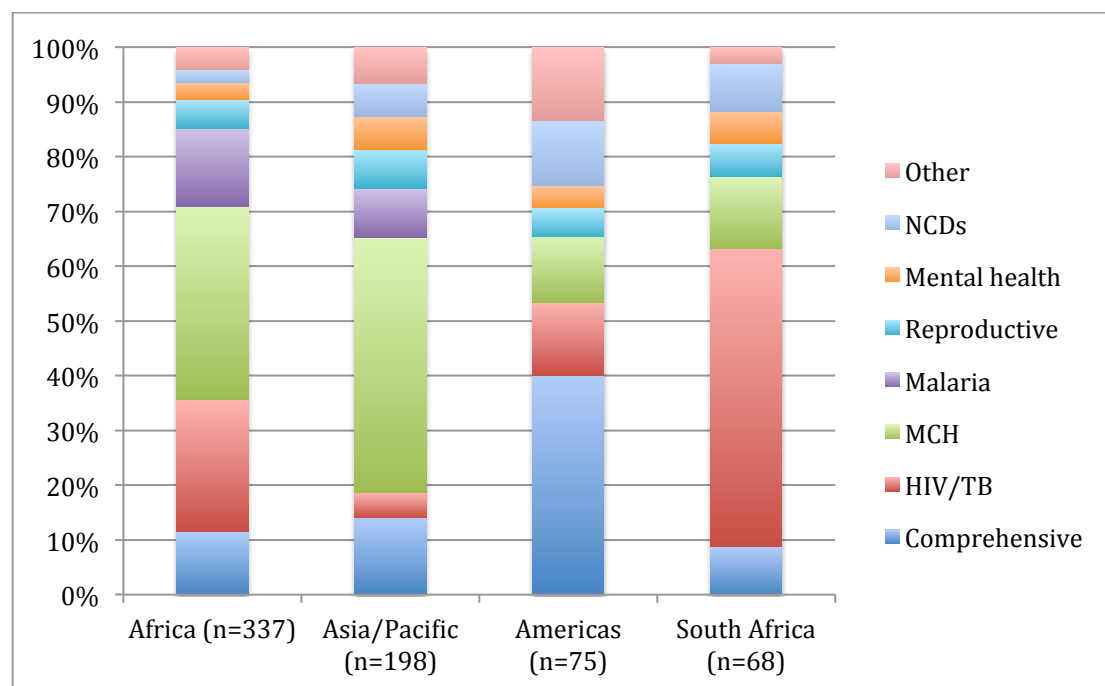
Much of the research on CHWs has focused on evaluating their ability to perform disease- or programme-specific tasks, and the resultant impacts on utilisation and health outcomes (Lassi et al. 2010; Christopher et al. 2011; Perry & Zulliger 2012; Mutamba et al. 2013). Driven by different imperatives and needs, CHW programmes (and research on them) have taken a variety of regional- and country-specific forms. Some, such as the Brazilian *Programa Saúde da Família*; Ethiopia’s Health Extension Workers and the *behtar*s of Iran, have emerged out of broader social, political and health sector change. In several Asian countries (Pakistan, Bangladesh, Nepal), CHW programmes have been established in response to the public health challenge of high maternal, neonatal and under-5 mortality. In the HIV-affected countries of southern Africa, home-based care and support grew organically through local community NGOs as a response to

overwhelming care and social needs. In other African countries, Global Health Initiatives and partnerships focused on malaria and childhood illness have been influential.

**Table 4: Profiles of publications on CHWs in LMICs, 2005-2014**

Characteristic		N	%
Region	Africa	345	50.9
	Asia/Pacific	202	29.8
	Americas	75	11.1
	Middle East	12	1.8
	Cross regional	44	6.5
Countries with 10 or more publications (with name of main CHW cadre)	India (Accredited Social Health Activist)	70	10.3
	South Africa	71	10.5
	Brazil (Community Health Agent)	60	8.8
	Ethiopia (Health Extension Worker)	39	
	Uganda (Village Health Teams)	34	
	Malawi (Health Surveillance Assistant)	32	
	Pakistan (Lady Health Worker)	32	
	Kenya	31	
	Bangladesh (Shasthya Shebika (BRAC))	28	
	Zambia (Community Health Assistant)	20	
	Nepal (Female Community Health Volunteer)	19	
	Ghana	17	
	Tanzania	16	
	Nigeria	14	
	Thailand (Community Health Volunteer)	12	
	Iran (Behvarz)	12	
	Rwanda (Binome)	11	
	Total	518	76.4

Regional differences in programmatic orientations are reflected in the findings of the scoping review, represented graphically in Figure 2 below. In Africa, publications were distributed between maternal-child health (MCH), HIV/TB and malaria. In Asia, MCH dominated as a focus, although with significant nodes of development in CHW-based mental health and non-communicable disease care. The comprehensive orientation of the Latin American publications reflects the dominance of the Brazilian Family Health Programme, which is delivered as part of an integrated PHC system.



**Figure 2: Regional profile of programmatic orientations in comparison with South Africa** (excluding Middle East, and cross-regional papers and where programme orientation not discernible). Note: South African papers also included in Africa.

Compared with other countries, the CHW literature from South Africa has had a heavy emphasis on community-based HIV and TB care, where more than half (54%) of the papers addressed these problems. In the earlier part of the period this literature was focused on the dynamics of home-based care (Akintola 2010) and on the WHO-advocated “DOTs” (directly observed, short course treatment) for TB (Clarke et al. 2005; Atkins et al. 2011). The latter has contributed significantly to a global evidence base on CHWs and on DOTs (Lewin et al. 2010). With the advent of antiretroviral therapy (ART), roles shifted to community-based adherence support and follow-up of care for ART (Schneider et al. 2008; Wouters et al. 2012; Grimwood et al. 2012), increasingly integrated with TB treatment (Uwimana et al. 2012; Heunis et al. 2013). South Africa has also developed and tested CHW-based models of integrated HIV and maternal, newborn and child health (Rotheram-Borus et al. 2011; Tomlinson et al. 2014), and is building an evidence base on CHW roles in non-communicable diseases (Puoane et al. 2012; Gaziano et al. 2014) and mental health (Petersen et al. 2012; Hung et al. 2014).

Across the globe, the most commonly reported CHW roles are in MCH, accounting for over a third of the total papers in the scoping review (Table 5). The promotion of integrated community case management (iCCM) of childhood illness, particularly in

Africa, is the single most important element in this. iCCM is a community- and CHW-based child survival strategy, adopted by WHO and UNICEF (UNICEF & WHO 2012). iCCM combines the diagnosis and treatment of malaria with artemisinin combination therapy, pneumonia with oral antibiotics, and diarrhoea with zinc and oral rehydration salts. It has been facilitated by the development of rapid diagnostic tests for malaria, thus allowing for more accurate diagnosis of fever in young children. The iCCM strategy, in particular, was the product of a concerted global agenda-setting process by an “epistemic community” of international NGOs, multilateral and bilateral agencies, and academic actors, who developed and promoted a package of feasible interventions targeted at the major causes of child mortality (Dalglish et al. 2015).

**Table 5: Programmatic orientation of publications**

Programme orientation	n	%
Maternal Child Health	235	34.7
Comprehensive	116	17.1
HIV/TB	106	15.6
Malaria	69	10.2
Reproductive health	37	5.5
Non communicable diseases	30	4.4
Mental health	28	4.1
Other	39	5.8
Not specified	18	2.7
Total	678	100

Only 17% of the publications in the scoping review adopted a comprehensive perspective on CHW and CHW programmes (i.e. addressing more than one health programme or disease). These publications included reports or evaluations of provincial or national programmes (see for example: Aghajanian et al. 2007; Giugliani et al. 2011; Banteyerga 2011; El Arifeen et al. 2013); and reviews of the state and effectiveness of CHW programmes across the world (Perry et al. 2014b).

The relative absence of literature providing comprehensive perspectives on CHW programmes, contextualised within national health systems, reflects the global preoccupation with disease- or programme-specific interventions, particularly in the MDG era. A plethora of donor-driven, vertical initiatives has resulted in “fragmentation, overcrowding, duplication and gaps” and poor alignment and integration with the national health system (Third Global Forum on HRH 2013b; Tulenko et al. 2013).

Although South Africa's community-based sector has evolved in its own unique way, its dynamics are not dissimilar to that described above. However, only a handful of South African articles in the scoping review grappled with the systemic challenges and took other than a programme- or disease-specific lens. They included papers reflecting on the pre-HIV era of CHW initiatives in South Africa (Doherty & Coetzee 2005; van Ginneken et al. 2010), a policy analysis of the unintended consequences of new policies on these older forms of delivery (Lehmann & Gilson 2013), the local governance of current community-based services (Nxumalo et al. 2013), and an emerging literature on ward-based outreach teams (Neupane et al. 2014).

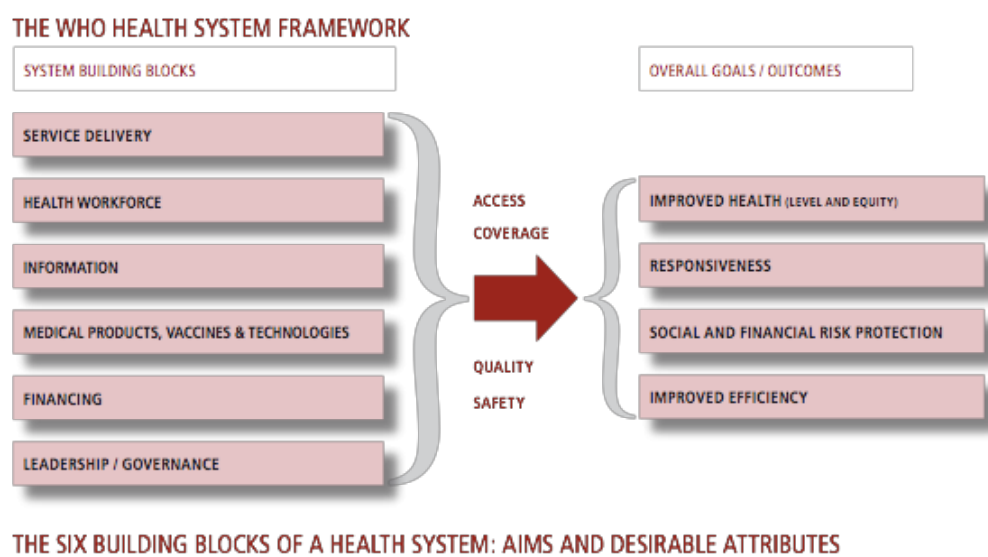
In sum, the growth in literature on CHWs provides empirical evidence of ever-increasing expectations for addressing health burdens through community-based action. South Africa forms part of this trend but with its own particular profile related to responses to the HIV epidemic. The literature has a strong disease- or programme-specific orientation, raising important questions for the design and sustainable delivery of integrated national programmes.

### **A systems perspective on CHW programmes**

There is some evidence of a shift in thinking globally in CHW programmes beyond tasks and roles to the challenges of achieving and sustaining an integrated set of outcomes at scale. This is referred to as a “system perspective”: “Large-scale public sector CHW programs are complex entities that require adapting a systems perspective to the national and local contexts” (Perry et al. 2014a:1-3).

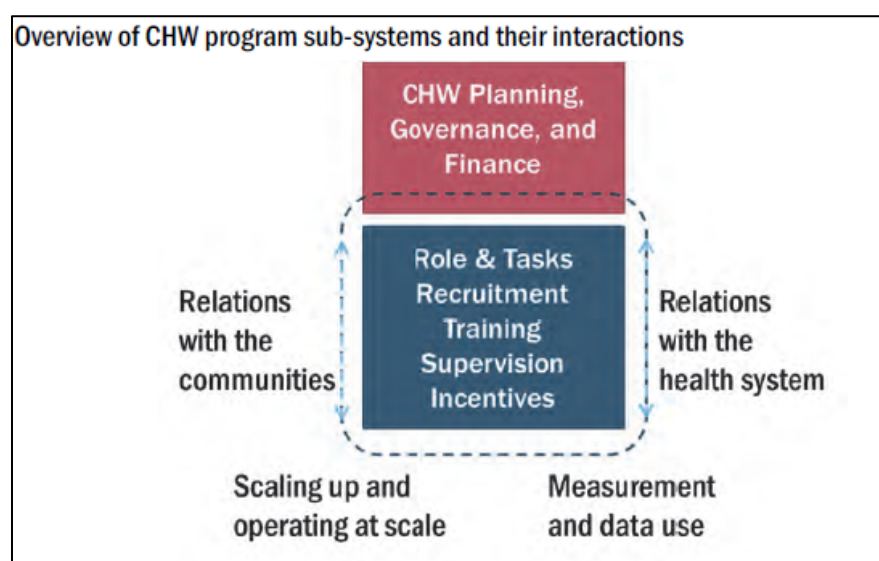
A “system perspective” entails, in the first instance, recognising that CHW programmes are constituted of “a set of interconnected parts that have to function together to be effective”(WHO 2007:14). The WHO framework on health systems (reproduced in Figure 3 below) proposes six generic building blocks that include financing, human resources, information, supplies, service delivery and governance and leadership. This framework draws attention to the underlying processes of health system functioning. It has played an important role in enabling a common language on health systems (Mounier-Jack et al. 2014), including for describing the elements of CHW programmes at

scale (Naimoli et al. 2014; Naimoli et al. 2015; Perry et al. 2014a).



**Figure 3: WHO Building Blocks framework of a health system**  
(Reproduced from: WHO (2007:4))

Increasingly, CHWs and CHW programmes are being considered not just as a human resource cadre, but as a sub-system of the health system (McCord et al. 2013) with its own specific set of interconnected parts (Figure 4). The programme elements include the core design aspects of CHW programmes (roles, selection, etc.), how CHWs interact with communities and are integrated into the formal health system, and the information, planning, governance and finance required to enable this.



**Figure 4: CHW programmes as a system**  
(Reproduced from: Perry et al. (2014a:1-3))

A key element of this thinking is the unique position of CHW programmes at the interface of the formal health system and “community systems” (Naimoli et al. 2014).

The implications of adopting such a perspective are that, firstly, CHW programmes (especially national ones) require a comprehensive approach to planning and design, taking into account all the building blocks (financing, supply chain, etc.) required for the functioning of programmes (McCord et al. 2013; (McGorman et al. 2012). Secondly, to realise their potential at scale, CHW programmes need to be integrated into PHC systems whilst simultaneously embedded in and supported by communities (Naimoli et al. 2012; Naimoli et al. 2015; Lehmann & Sanders 2007).

Although not often explicitly discussed, this also raises a more fundamental set of questions facing CHW programmes (Lehmann & Sanders 2007; Sundararaman et al. 2012):

- Should CHWs be conceptualised as agents of community mobilisation or as an extension of the health system?
- Should they become civil servants and considered as part of the health workforce or be managed through non-governmental intermediaries?
- Are CHW programmes to be presented principally as implementers of a core package of technical disease interventions (Vitamin A, immunisation, malaria diagnosis and treatment, etc.) or do they have a broader household and community role?
- Who are workers accountable to and who do they identify with – communities or the health system?
- To what extent are they sustained by their embeddedness within communities?

The WHO building blocks framework, while providing a useful heuristic, is generally regarded as an over-simplified representation of a health system, as the sum of its building blocks (De Savigny & Adam 2009; van Olmen et al. 2012; Mounier-Jack et al. 2014). The reality of health systems is that “they are complex; like a living organism, they are dynamic, with interacting components – at various geographical levels – that lead to adaptation and to the emergence of new dynamics. These interactions can be both predictable and unpredictable. They generate feedback loops that will continue shaping the systems and its different components” (Mounier-Jack et al. 2014:6). Health systems



are also social and political institutions involving power and interests, significantly influencing system interactions (Gilson 2016). The WHO framework thus has limits as an analytic tool, and, by extension, as a guide for planning or management.

In several respects, the CHW system model presented above (Figure 4) is an advance on the building blocks framework, in emphasising relationships and interaction, and the dynamic and iterative nature of systems. However, as with the WHO framework, it does not capture the complex, emergent and “messy” real world of CHW programme implementation (Paina & Peters 2012; George et al. 2015). As indicated in Chapter 1, national CHW programmes are complex interventions with system-wide effects (De Savigny & Adam 2009). They are unlikely to unfold in a linear fashion, and are not easily programmable using universal blue prints, especially where implementation involves some degree of decentralised decision-making. This has implications for thinking about the governance and leadership of CHW programmes, explored in more detail in later sections of this chapter.

## **Empirical evidence on systems aspects of CHW programmes**

Accompanying the growth of interest in CHWs is a considerable body of empirical research examining the system elements of CHW programmes outlined above. This literature has focused predominantly on aspects of programme design (e.g. workforce issues, monitoring) and on the micro-contexts of implementation (e.g. relationships with the formal health system and communities).

### *Programme design and workforce issues*

With respect to programme design and workforce issues, a key (and often unresolved) preoccupation across countries and regions is that of CHW motivation and retention, and the bundle of human resource practices that influence this – such as selection, workload, community and health system support, remuneration, career advancement, and other incentives (Haines et al. 2007; Hermann et al. 2009; Kane et al. 2010; Jaskiewicz & Tulenko 2012). When asked, CHWs almost universally express dissatisfaction with some aspect of their work environment, such as being under paid, under recognised, and poorly respected and supported by formal health sector players

(Mishra 2014; Scott & Shanker 2010; Kok et al. 2015). This is compounded by lack of resources (transport, medication, etc.) and weak supply chains in many settings (Chandani et al. 2012).

Several publications reflect critically on large-scale CHW programmes based on volunteer mobilisation (Maes et al. 2010; de Wet 2011; Ludwick et al. 2014; Alam & Oliveras 2014). In Ghana, a system of community volunteers associated with decentralised nurse-based PHC was poorly implemented when scaled up across the country (Nyonator et al. 2005) and provided no added benefit (Binka et al. 2007) to health outcomes. In Thailand, on the other hand, a very large and sustained community health sector is based almost entirely on the idea of voluntarism (Winangnon et al. 2007). Nepal, India, Bangladesh and Pakistan have established CHW systems based on volunteers but supported by structured incentive packages. Some national programmes adopt a tiered approach, where full time paid workers interact with and mobilise volunteer cadres (Leon et al. 2015). Such differentiated models rely for their functioning on social gains achieved through volunteering, combined with a realistic appraisal of hours of work required with the potential for future economic opportunities. Kasteng et al. (2016) call for a careful assessment of the opportunity costs of volunteering, and the complex set of local and context-specific factors influencing this.

In a systematic review, Hill et al. (2014) noted the dearth of evidence on effective models of CHW supervision. Based on studies of supervision systems for other health professionals, they emphasise the role of supervision as support (rather than just monitoring) and propose different modes (including peer and community) of supervision. Given the often difficult relationships between CHWs and local health professionals, a number of studies are currently exploring more effective models of CHW supervision and support that actively draw on community-based support (Mkumbo et al. 2014), make greater use of technology such as mHealth (Braun et al. 2013; Källander et al. 2015), and develop cascades of supervision extending to district levels (Robertson et al. 2015).

### *Relationships with communities*

There is some recognition in the literature of the importance of community acceptability (Condo et al. 2014; Nanyonjo et al. 2012) and community support and respect, which form a significant element of CHW motivation (Akintola 2010; Kok et al. 2016). This

relates more fundamentally to the issue of community “embeddedness”, that is, the trust and legitimacy afforded CHWs (Campbell & Scott 2011). This is especially relevant for programmes relying on community mobilisation in one form or another. Being embedded may also, however, imply being bound by local social norms that constrain the work of CHWs and serve to entrench inequalities (Abbott & Luke 2011). In this regard, a growing number of authors reflect on the gendered nature of CHW programmes and its implications (Mumtaz et al. 2013; Feldhaus et al. 2015). In many places, the work of CHWs (especially volunteers) is seen as an extension of female household caring roles, and the exclusive preserve of women (often reflected in the titles of the cadres) (Thabethe 2011). Others have suggested that CHW work legitimates new spheres of public participation for women (Naidu et al. 2012; Hoodfar 2010), in which they may challenge prevailing (including gender) social norms (Nandi & Schneider 2014).

#### *Financing*

While recent studies have suggested that CHW programmes can be both affordable (Nefdt et al. 2014) and cost effective (McPake et al. 2015), this is not universally the case. In a multi-country study of the implementation of iCCM in eight African countries, Collins et al. (2014) found that a combination of low utilisation of CHWs and high management and supervision costs resulted in relatively low programme efficiency and questionable cost effectiveness. Amouzou et al. (2016) found that the implementation of iCCM at scale in Malawi resulted in no additional utilisation or mortality gains, despite the investments. Sustainability of iCCM as a donor-supported, “quick win” initiative has been raised as a concern (Bennett et al. 2014; Sarriot et al. 2015). These findings underscore the views expressed by Lehmann and Sanders (2007) that CHW programmes are “not a panacea for weak health systems nor a cheap option to provide access for underserved populations”.

#### *“Whole system” perspectives*

Similar to an earlier generation of evaluations of country programmes (Berman et al. 1987; Walt et al. 1989), a small group of publications take a holistic, macro perspective on the design, implementation and scale up of CHW programmes, drawing on the fields of policy analysis and systems thinking. They include the country specific evaluations, comparative country reviews and reflections emerging out of significant global

consultations convened by, amongst others, GHWA (Tulenکو et al. 2013) and USAID (Naimoli et al. 2014).

Tendler and Freedheim (1994) showed how a particular set of situational, political and design factors interacted in the success of a state run CHW programme in Ceara State, Brazil. A comparative analysis across a number of country settings proposed a set of “operating principles” for successful CHW initiatives at scale including close linkages with the local PHC system, continuous improvement through active organisational management, and sustainable financing (Liu et al. 2011). A multi-country study of integrated community case management (iCCM) adoption and implementation in six sub-Saharan African countries examined the interface between global health agendas and country contexts, and the factors influencing the varied adoption of the strategy (Bennett et al. 2014; George et al. 2015). Sarriot et al. (2015) demonstrated the value of systems dynamic modelling in their causal loop analysis of interacting challenges (political, financial, user and local capacity) to the sustainability of iCCM in Rwanda.

A number of typologies of CHW programmes have been proposed, seeking to represent the heterogeneity of country initiatives and the background systems within which they are located. The descriptive typology of national CHW programmes of the Global Health Workforce Alliance combines considerations of duration of training, scope of roles, strength of supervision systems and capacity of the local health system (Bhutta et al. 2010). Perry et al. (2014a) categorise large-scale CHW programmes into whether they are based on full-time, salaried cadres (including auxiliary and health extension workers), or on volunteers (regular or intermittent). Building on this basic distinction, the CORE Group, a US-based networking organization developed a typology of CHW programmes that include criteria of remuneration (compensation), role in households, presence of differentiated layers of cadres, education and degree of specialization (Table 6).

Combinations of these factors result in particular programme configurations e.g. unpaid, non-professional, specialised cadre working directly with households (CHWs in Rwanda); the paid, professional, generalist cadre (Health Extension Workers in Ethiopia) working with volunteers; or the paid, professional, generalist cadre working directly with households (such as the Family Health Teams in Brazil).

A fuller typology of national CHW programmes would also consider the following:

- linkage and integration with, and capacity of, the local primary health care and district health system
- role of organizational intermediaries (such as NGOs) and partners
- degree of embeddedness in communities and community health systems, and the social context (urban/rural, cohesive/fragmented etc.) of communities
- primary identity of CHWs as belonging to the health service or the community, and the balance between community and rights mobilization and technical roles of workers.

**Table 6: Key characteristics of CHW programmes**

Parameter	Definition	Example
Compensation	On Payroll	Malawi HSA
	Not on Payroll	Uganda VHT
Distance to Household	Household visitation via other volunteers	Kenya CHEW
	Work directly with households	Mali Relay
Education	Health Professional	Ethiopia HEW
	Literate but not Health Professional	Malawi HSA
	Illiterate to semi-illiterate	Senegal Relais
Specialization	Specialized Cadre	Rwanda CHW
	Generalized Cadre	Tanzania CHW

Source: Reproduced from [www.slideshare.net/COREGroup1/5102011-ch-ws-on-the-move](http://www.slideshare.net/COREGroup1/5102011-ch-ws-on-the-move) [accessed 25 April 2017]

In sum, while there is a substantial and growing body of literature concerned with the systems aspects of CHW programmes, these often focus on specific aspects of programme design. Few take a more meso or macro perspective, investigating CHW programmes holistically within local health and community systems, or the processes of implementation and scale-up in national health systems. Despite the return to popularity of CHW programmes, many of the systems barriers and problems of CHW programmes documented in an earlier generation of CHW programmes remain as problems.

In an assessment of the dominant reality of CHW programmes in LMICs, Tulenko et al. (2013) describe a situation of fragmented, disease-specific initiatives, provided by multiple, uncoordinated actors and competing organisations, and with an unclear link to

the health system. This could be due, in part, to the failure to consider the governance and leadership of CHW programmes as part of national health systems. As pointed out, “literature on CHW-program management has tended to focus on direct CHW management issues, such as motivation, supervision, incentives, and training, but few have systematically theorized and documented the management of CHW programs at the strategic level” (Liu et al. 2011:421).

## **Health System Governance<sup>6</sup>**

Governance is a wide-ranging concept which has been approached in a number of ways and from different disciplinary perspectives. As a starting point, a generally accepted definition of governance is that of the United Nations (outlined in Box 1 below). Used in a more normative (and perhaps more easily understood) sense, words such as “good governance” are associated with societal attributes such as the rule of law, public participation and the functioning of electoral systems, capacity to prevent and address corruption, transparency, and access to information. Good governance is seen as key to development, and agencies such as the World Bank and USAID have developed metrics of governance showing their relationship to aid effectiveness (Dollar & Pritchett 1998). Others, such as Transparency International (<https://www.transparency.org/>) and the Ibrahim Index of African Governance (<http://mo.ibrahim.foundation/iiag/>) routinely monitor and rank countries on the quality of their governance.

Box 1: The UN (UNDESA et al. 2012:3) defines governance as: “the exercise of economic, political and administrative authority to manage a country’s affairs at all levels. It comprises the mechanisms, processes and institutions through which citizens articulate their interests, exercise their legal rights, meet their obligations and mediate their differences.”

Governance is also a central concept in health systems, receiving growing attention in recent years as part of health system strengthening initiatives (Brinkerhoff & Bossert 2014). Governance (joined with the concept of leadership) is one of the six building

---

<sup>6</sup> This section focuses specifically on health systems governance from a country perspective and does not address literature referred to as Governance for Health (concerned with “Health in all” policies) or Global Health Governance (the architecture and processes of supra-national health governance such as the WHO)(Kickbusch & Szabo 2014)

blocks of the WHO's 2007 framework of a health system. In the earlier version of this framework, outlined in the World Health Report of 2000, this function was referred to as “stewardship” (WHO 2000). Stewardship was defined in this report as the oversight over other health functions (such as financing and delivery services), with strong emphasis placed on the role of (national) health ministries. The subsequent shift to “leadership and governance” in the 2007 updated WHO Framework (WHO 2007) draws on these origins, while embracing a more comprehensive and recognizable set of ideas, actors and health actions (AHPSR 2008).

The leadership and governance function of health systems is defined by WHO (2007:vi) as “the oversight and guidance of the whole system, public and private, to protect the public interest”. It involves a set of sub-functions, spelt out in Table 7 below, which encompass the structure and design of systems, development of policy and regulations, mechanisms of “horizontal” collaboration, and monitoring and accountability. Leadership and governance, with the other building blocks, have as their goals to ensure not only improved health, but also social and risk protection, responsiveness, and efficiency.

Since the publication of the WHO framework in 2007, a number of reviews have sought to develop greater definitional and operational clarity on the governance function in health systems (AHPSR 2008; Siddiqi et al. 2009; Mikkelsen-Lopez et al. 2011; Barbazza & Tello 2014).

Drawing on ideas of “good governance” outlined earlier, a key addition in these reviews is the need to foreground the *values* underpinning governance such as public good, equity, human rights, and control of corruption. The sub-functions have also been elaborated to include aspects such as participation and consensus, strategic visioning, transparency (e.g. of decision-making, information), and partnerships. In a comprehensive and recent review, Barbazza and Tello (2014) spell out a list of evidence-based tools associated with each sub-function, thus enhancing thinking on the design of governance mechanisms in health systems. Others have developed the frameworks into assessment matrixes and tools (Siddiqi et al. 2009; Mikkelsen-Lopez et al. 2011).

**Table 7: Health System Leadership and Governance sub-functions**  
(Reproduced from: WHO (2007: 23))

Sub-function	Tasks
Policy guidance	<ul style="list-style-type: none"> <li>• Formulating sector strategies and also specific technical policies;</li> <li>• Defining goals, directions and spending priorities across services;</li> <li>• Identifying the roles of public, private and voluntary actors and the role of civil society</li> </ul>
Intelligence and oversight	<p>Ensuring generation, analysis and use of intelligence on:</p> <ul style="list-style-type: none"> <li>• trends and differentials in inputs, service access, coverage, safety;</li> <li>• responsiveness, financial protection and health outcomes, especially for vulnerable groups;</li> <li>• the effects of policies and reforms;</li> <li>• the political environment and opportunities for action;</li> <li>• policy options</li> </ul>
Collaboration and coalition building	<p>Across sectors in government and with actors outside government, including civil society, to</p> <ul style="list-style-type: none"> <li>• influence action on key determinants of health and access to health services;</li> <li>• generate support for public policies; keep the different parts connected - so called ‘joined up government’</li> </ul>
Regulation	Designing regulations and incentives and ensuring they are fairly enforced
System design	Ensuring a fit between strategy and structure and reducing duplication and fragmentation
Accountability	Ensuring all health system actors are held publicly accountable. Transparency is required to achieve real accountability

A newer generation of thinking on health system governance, however, has sought to expand the terms of the debate, in the process challenging the assumptions underpinning the WHO “sub-functions” approach (and the various iterations of it).

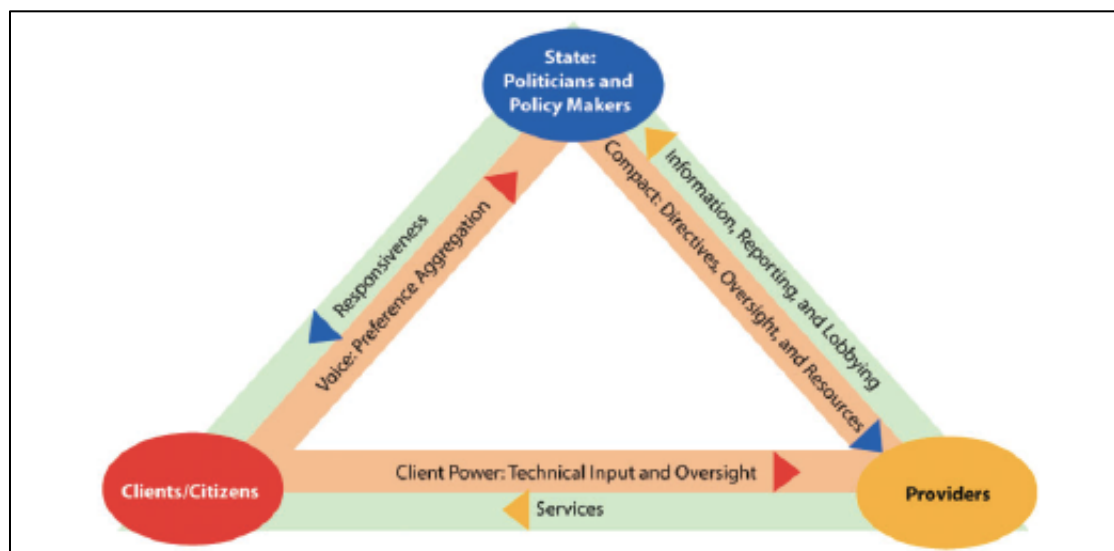
This thinking involves three inter-related shifts:

- Firstly, from a state- to society-centred approach to governance, which more fully recognises “the multiplicity of societal actors involved in governance” (Brinkerhoff & Bossert 2014:685; Abimbola et al. 2014).
- Secondly, from viewing governance, especially in decentralised or plural health systems, as a property of the national sphere to “multi-level” and “polycentric” approaches to governance (Caulfield & Hort 2012; Abimbola et al. 2014; Touati et al. 2015)



- Thirdly, from a linear and top-down conception of the policy process, which starts with policy formulation then proceeds in sequence to implementation and evaluation, to more complex processes involving bottom-up and top-down interactions across all stages and in an iterative fashion (Hill & Hupe 2006; Abimbola et al. 2014).

In a departure from the sub-functions approach, which centres principally on the role of government as steward, Brinkerhoff and Bossert (2014) propose a model that brings into focus a more comprehensive range of governance “agents” and the “principal-agent” relationships between them. Their model (reproduced in Figure 5 below) proposes three key sets of actors: the state (including, but going beyond, government), providers, and citizens/clients.



**Figure 5: Health Governance Framework**  
(Reproduced from: Brinkerhoff & Bossert (2014:697))

Drawing on institutional economic theory, the relationships between the actors are represented as ones of principal and agent – citizens (principals) vote governments (their agents) into power, who, in turn (as principals), appoint/regulate/etc. providers (the agents) to provide services; acting as principals, providers have expectations of clients as agents (e.g. to use services, adopt preventive behaviours). These relationships have both formal and informal dimensions. Good governance relies on the functioning of these various relationships and the extent to which the “problem of agency” – whether agents sufficiently act on behalf of the principals – is addressed.

Brinkerhoff and Bossert's (2014:686) framework is summarised in their definition of governance as "...the rules that distribute authorities, roles and responsibilities among societal actors and that shape the principal–agent interactions among them. These rules can be both formal, embodied in institutions (e.g. democratic elections, parliaments, courts and sectoral ministries), and informal, reflected in behavioural patterns (e.g. trust, reciprocity, civic-mindedness and patron–client relations)."

The value of this approach to thinking about governance is that it shows more clearly the independent governance role of providers and citizens/clients, the interests and power embedded in these relationships, and the importance of accountability mechanisms (Cleary et al. 2013). It also points to the informal rules which mediate the "de jure" (official) and "de facto" (real) dimensions of health systems (McPake et al. 2006).

Another difficulty with the notion of national ministries as key stewards of health systems is that their power to govern may, in reality, be limited. This is the case in federal or decentralised health systems where sub-national state actors have considerable decision-making power (Touati et al. 2015), or in plural health systems where the state exists alongside and competes for authority and legitimacy with a multitude of other players – donors, international agencies, private providers, NGOs and others (Caulfield & Hort 2012; Abimbola et al. 2014). In this reality, governance, understood as "setting the rules of the system", is both *multilevel* and *polycentric*. Governance is also referred to as *distributed*.

The concepts of multilevel and polycentric governance have their origins in the establishment of the European Union in the early 1990s, where new forms of supra-national governance emerged in parallel to movements to decentralise decision-making to local government (referred to as "new localism"). As explained by Touati et al. (2015:2), "new localism ... puts emphasis on the importance of partnership with all stakeholders, and in that perspective it substitutes to the notion of local *government* that of local *governance* ... the notion ... that governments are unable to influence the evolution of society on their own" (their italics). This echoes the multiple-actor perspective of Brinkerhoff and Bossert (2014). It also challenges the idea that the centre exists in a purely hierarchical relationship to the local level, able to align the actions of the periphery to the centre's objectives (rules). Policies do not unfold in a linear fashion from national

(or supra-national) formulation to sub-national and local implementation, but instead are co-produced, shaped and reinvented at multiple levels in a complex and negotiated dynamic (Hill & Hupe 2006).

Multilevel governance thus consists of “negotiated, non-hierarchical exchanges between institutions at the transnational, national, regional, and local levels” (Touati et al. 2015:4), involving “sharing responsibilities and power of influence, both horizontally (between ministries and between actors at a local level), and vertically (between various government levels), for the development and implementation of public policies” (Touati et al. 2015:2).

If governance is distributed and the policy process non-linear, how then can the practices of governance be conceptualised in multilevel and complex health systems, and with what implications for the leadership and governance role in these systems?

In Hill and Hupe’s “Multiple Governance Framework”<sup>7</sup> (2006:560-1), actors engage in three forms of governance (referred to as “Action Levels”):

- Constitutive governance: “the fundamental decisions about the content of policy and about the organisational arrangements for its delivery”
- Directive governance: “facilitating the conditions for the realisation of collectively desired outcomes”
- Operational governance: “managing the realisation process”

These levels of action, which correspond broadly with the policy process, are manifest in individual interactions, in organisations and in systems (Table 8).

Using the example of the British National Health Service, Hill and Hupe (2006) show how the three action levels may be present in all layers of the system: fund-holding general practitioners have considerable latitude in shaping entitlements and forms of provision (constitutive governance), while, conversely, forms of clinical audit involve direct intervention in fields of practice from the centre (operational governance).

---

<sup>7</sup> This work draws on Elinor Ostrom’s theory of “Institutional Analysis and Development”, as does the analysis by Abimbola et al. (2014).

**Table 8: The Multiple Governance Framework**  
(Reproduced from: Hill and Hupe (2006:564))

Scale of action situations	Constitutive Governance	Action level	
		Directive Governance	Operational Governance
SYSTEM	Institutional design	General rule setting	Managing trajectories
ORGANISATION	Designing contextual relations	Context maintenance	Managing relations
INDIVIDUAL	Developing professional norms	Situation-bound rule application	Managing contacts

They explain it as follows: “The nested character of the framework implies that, conceptually, one action level is not necessarily confined to one administrative layer. Whether, for instance, in a given policy process, a layer of government practices ‘just implementation’ or rather ‘policy coformation’ is an empirical question, resting on the interpretation of the extent of change... Similarly, there are various acts of ‘operational governance’ – consisting of managing policy trajectories, managing inter-organisational relations, and managing external and internal contacts – which can be regarded as sublevels of action and are not confined to one specific layer of government.” (Ibid:563)

The implication of these newer approaches is that they require new ways of thinking and modes of governance and leadership. Abimbola et al. (2014), for example, outline a multilevel and polycentric framework for the governance of plural PHC systems, which is focused on strengthening the collective (directive) governance role of local communities, supported by regulatory processes and resources at other levels.

They also require mechanisms that combine vertical, “bureaucratic” accountability, involving financial and performance compliance, with “external” or horizontal accountability that enables cooperation across organisations and responsiveness to citizens. The latter rely less on audit and control, than on dialogue, sharing of information, and cultures of trust and reciprocity (Caulfield & Hort 2012; Cleary et al. 2013).

Finally, governing requires strategic ability and political acumen. Kickbusch and Gleicher (2011:72) refer to this as “transformational leadership”, involving “the ability to discern

trends in the face of complexity and adaptability and to capitalize on those trends. It is a skill that allows a leader to align tactics with objectives and then create smart strategies in an evolving environment. [It requires making] use of ‘windows of opportunity’, and ... apply[ing] a mixture of hard and soft power strategies to achieve change.” They go on to point out that “many technical experts in health and health care and public health managers are not prepared for the political nature of health and the highly politicized context in which health decisions are taken... [This is] why politically astute ministers and permanent secretaries are so important for moving governance for health forward.”

In sum, the field of governance offers a range of other theoretical and conceptual tools that may be of value. These include concepts such as multilevel, polycentric and distributed governance; the interplay of the formal and the informal; vertical and horizontal accountabilities; the role of interests and power; and the shift from state-centric to society-state approaches.

### **The governance and leadership of CHW programmes**

Lewin and Lehmann (2014) define CHW programme governance as establishing the architecture, relationships, decision-making and stakeholder participation structures of programmes. This includes whether CHWs should be part of the formal health system or managed separately, the extent of decentralised decision-making, and mechanisms of community participation. They also emphasise that “because CHW programs are usually located between the formal health system and communities and involve a wide range of stakeholders at local, national, and international levels, their governance is complex and relational” (Ibid:4-1).

In Naimoli et al.'s (2014) “logic model” of CHW programmes, governance is the oversight of elements of the WHO health system “building blocks” applied to CHW programmes. McCord et al. (2013), on the other hand, offer a more specific definition of CHW programme leadership and governance as the establishment of participation structures (involving communities and “partners”), and as processes of clinical governance (ensuring quality). This suggests an operational or implementation perspective on governance CHW programmes, also alluded to by Lewin and Lehmann

(2014) when they refer to the overlap of governance and management, where the latter is “more concerned with running or implementing programs”.

For the most part, the emerging guidance on CHW programmes imagines an authoritative national decision-maker, involved in making design choices in the planning or strengthening of programmes and with the capacity to implement these at scale. In doing so, it brackets the “messier, real world of health politics, policy and practice” (George et al. 2015:ii3), where a range of local, national and international players, rationales, and interests influence or compete in the decision-making space. This is well illustrated in the case of the development of the Community Health Assistant Strategy in Zambia, where the policy process was perceived as flawed and inappropriately influenced by actors, such as donors and politicians with position and power (Zulu et al. 2013). The multi-country study of the adoption of the WHO/UNICEF-advocated iCCM strategy referred to earlier found that technical officers in ministries of health had relatively little power to influence the policy process. Policy adoption and implementation occurred in political and health system contexts, where the ability to interface with existing rationales and forms of service delivery was key (Bennett et al. 2014; George et al. 2015).

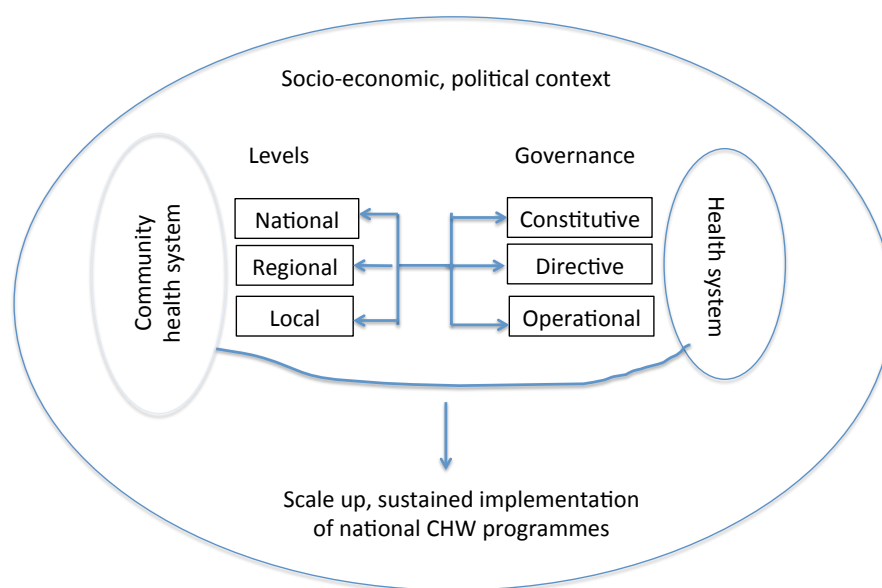
Normative guidance on CHW programmes also tends to assume a single (or dominant) cadre, whereas the everyday reality of community-based health services is a highly plural one, as described by Standing and Chowdhury (2008) in Bangladesh and by Aantjes et al. (2014) in four southern African countries. This plurality poses problems of coordination and coherence, raising the importance of local governance of CHW programmes (Sarriot et al. 2015; Mogedal et al. 2013).

Much of the systems literature on CHWs speaks indirectly to questions of governance and leadership, some, as above, pointing explicitly to its importance (Liu et al. 2011a). Beyond this, there is little empirical analysis focusing specifically on governance and leadership of large-scale CHW programmes across levels of government in real-life health systems. A recent example is that by Nambiar and Sheikh (2016), who evaluated the enabling role of a sub-national governance structure, the State Health Resource Centre in the successful scale-up of the Mitadin (CHW) programme in Chhattisgarh State in India. They point to the State Health Resource Centre’s position as a semi-autonomous, but government-funded, agency – the way it involved a plural and multi-

stakeholder group in governance processes, which merged bottom-up locally-felt needs with top-down technical programme inputs. This case study provides interesting insights into the sub-national governance of CHW programmes at the interface of the formal system and communities.

In sum, thinking on governance and leadership in national CHW programmes is shaped by an earlier generation of approaches centred on the WHO building blocks framework. There is some recognition of the complexity of the interfaces – in particular between community and health system – of such programmes, the essentially political nature of processes, and the need to combine policy design with considerations of implementation. However, the field remains under-developed, both conceptually and empirically. Located within notions of systems and systems complexity, the ideas of multi-level/polycentric governance, and Hill and Hupe's (2006) multiple governance framework, offer systematic and holistic approaches for researching the field. These are represented in Figure 6 below. National CHW programmes exist in particular socio-economic, political and historical contexts. To be sustained at scale such programmes require governance and leadership across all levels the system as well as the health system-community interface, straddling both design and implementation phases (from constitutive to operational decision-making).

**Figure 6: Key ideas and concepts in the governance and leadership of national CHW programmes**



## Chapter 3: Methods

### Introduction

The PhD is located within the field of health policy and systems research (HPSR) (WHO 2012), and adopts one of the common research strategies in the field, namely the case study. A case study is defined by Yin (2014:16) “as an empirical inquiry that investigates a contemporary phenomenon (“the case”) in depth and within its real-life context, especially when the boundaries between phenomenon and context may not be clearly evident”. This methodology is most suited to the macro-level and comparative perspectives on provincial-level implementation of the WBOT strategy in this thesis. The interest in change in “whole systems” and at scale stems, I argue<sup>8</sup>, from my own particular positioning as “embedded country researcher” in a context of societal transition and change. It has informed my approach to writing about the South African health system more generally over the years (Schneider et al. 2006; Schneider et al. 2010). This chapter focuses on these methodological stances whilst also summarising the data collection methods, which are described in more detail in the four papers. It begins by outlining the assumptions about knowledge underpinning my approach to research in this thesis.

### Epistemological starting points

Broadly speaking, my ontology (beliefs about reality) and epistemology (beliefs about how knowledge is generated about this reality) fall somewhere along the spectrum between positivism and relativism, best described as critical realism (Gilson 2012). Originally developed as a theory by Roy Bhaskar (<https://centreforcriticalrealism.com/>), critical realism posits that social systems have a material reality and social truths independent of the observer, but that these truths are largely invisible and can never fully be apprehended or “known”. This is especially the case for open systems, of which the health system is a typical example<sup>9</sup>. These are social or “peopled” institutions, characterised by fluid boundaries and the presence of multiple actors and organisations

---

<sup>8</sup> The shift to the use of the first person (“I” “my”) here (as opposed to “the candidate” or “the researcher”) in reflecting on my positionality is deliberate.

<sup>9</sup> In contrast to say, a laboratory, which would be an example of a closed system.



involved in a wide variety of relationships and transactions. Health systems display features of complexity, such as non-linearity (constant inputs do not result in predictable outputs), interaction and feedback, producing unintended consequences, the emergence of adaptive behaviours and self-organisation, and context specific dynamics (Paina & Peters 2012) (Sarriot et al. 2016). In other words, health system behaviour does not conform to the “constant conjunction” principle where “event 2... follows event 1” (Marchal et al. 2013:125).

Researching open systems (such as health systems) involves the acknowledgement of subjectivity and interpretation. In critical realism the distinction is made between “the transitive or changing knowledge of things” (our research insights, theories and ways of thinking about health systems) and “the intransitive or the relatively unchanging things which we attempt to know” (the objective reality or structure of health systems) (<https://centreforcriticalrealism.com/>). Knowledge of the intransitive is mediated by the transitive, limiting our ability to truly understand the structures and mechanisms of health systems. Furthermore, intransitive does not mean static: “reality is ... temporal and changing” as the product of human agency (Ibid)<sup>10</sup>. The material reality (resources, technology, etc.) and social contexts of health systems shape the behaviour of actors within it, who in turn reproduce and drive the change in these conditions.

Theory driven evaluation (TDE) is an approach to evaluating “programmes” or interventions on social systems which start from these premises (Pawson & Tilley 2004). TDE recognises the attributes of complexity (both of the interventions themselves and the systems in which they are implemented), and seeks to develop an understanding of “what works, for whom and under which circumstances”. It has thus become increasingly popular in research which seeks to take a “whole system perspective” where programmes are understood holistically as embedded in relationships, contexts and time periods (Marchal et al. 2013). TDE often makes use of the case study method as a research strategy. Secondly, it aims to elucidate the underlying (social) mechanisms of change rather than just the surface manifestations of programme inputs and processes. Such mechanisms are “theories of change”, resulting in “plausible” rather than probabilistic statements of causality. While not following the methodology of TDE in

---

<sup>10</sup> This relates to the fundamental debates within social theory, which critical realism addresses, of the relationship between social/material structures and human agency.

any specific sense, such as the six-step framework for developing programme theories proposed by Van Belle et al. (2010), this PhD draws on many of its underlying assumptions.

The language and approaches of complex adaptive systems and theory-driven evaluation have only recently found their way into mainstream health systems research. However, many of the assumptions underpinning TDE were already evident in an earlier generation of approaches to health system and policy analysis developed by Walt and Gilson (1994). This tradition of analysis, from the field of political science, examines the interactions between system interventions and the actors, contexts and processes of policy development and implementation (Walt et al. 2008). With explicit attention to actor interests, power and networks, it draws attention to health systems as political institutions and by extension their moral and ethical dimensions (Gilson 2012; Sheikh et al. 2014).

Along with others, I believe that it is possible to advance knowledge on the invisible mechanisms of health systems, but that the knowledge generated is always tentative, incomplete and subject to revision (“transitive”) – as “theories” about systems rather than the “truth” of those systems. This has implications for researching health systems, recognising that there are many different perspectives and lenses on these systems. For this reason, the case studies making up this thesis are constructed of multiple narratives (across system hierarchies and functions), documentary sources, processes of engagement within research teams, and feedback and testing of findings.

Furthermore, the thesis recognises that health systems are open, social and therefore complex systems, bound in particular spaces and time. The emergent – spontaneous, creative and self-organising – behaviour of such systems is illustrated in the divergent manner in which a single national strategy was adopted at provincial level in South Africa. On the other hand, despite context specificity and complexity, research and ideas on individual health systems do often resonate with, or generate new ways of thinking in, other health system contexts. This form of lesson learning is referred to as analytic rather than statistical generalisability (Yin 2013), a process of generalising “to theoretical propositions and not to populations or universes” (Yin 2014:21).

If research and analysis can lead to understanding (even if partial) of the underlying “rules” of health systems, then it is also possible, through deliberate action (policies, resource allocation, etc.), especially if these are *deliberative*, to change systems. Thoughtful and informed approaches to governance and leadership can advance the implementation of programmes at scale. This belief, however, also rests on the understanding that change in complex systems is, at best, enabled and supported but not programmable (Greenhalgh et al. 2004). Change results from the coordination of top-down actions with bottom-up, emergent and adaptive behaviours, that when sufficiently widespread, lead to “tipping points” and shifts at a systemic level (Paina & Peters 2012).

### **Embedded country researcher**

“Where you stand depends on where you sit” (Miles 1978). This famous maxim from the field of management posits that how you see the world depends on your material and structural position in that world. Where one is positioned in health systems – as policy maker, manager, researcher, practitioner, user, donor or international agency – will influence how one sees the “problems” of a health system, and therefore the priorities for research. The most commonly evoked divide in the research community is between “insider” and “outsider” (the “emic” and “etic” perspectives), and between international and country level players (typically “North” and “South”) (Walt et al. 2008). These differences are underpinned by the intersections of race, gender, class and profession (Milner 2007; Larson et al. 2016).

In a recent study of research priorities for integrated community case management (iCCM) of childhood illness, participants from across the globe – high income countries, headquarters of international organisations, regional bodies, and within country health systems and NGOs – were asked to generate and rank research questions (Wazny et al. 2014). One of the key findings was the divergence in research priorities drawn up by the headquarters/high income country versus the low- and middle-income country respondents. The former prioritised technical interventions (such as diagnostic tools, antibiotic regimens), while the latter prioritised health system themes (such as supervision and retention of CHWs, health system support and community mobilisation) (see Table 9).

**Table 9: Research priorities for iCCM – global health vs country perspectives**  
(Reproduced from: Wazny et al. (2014:7))

<b>Table 4.</b> Top 5 research priorities by organization HQ/HIC participants							
HQ RANK	RESEARCH QUESTION	CRITERION 1	CRITERION 2	CRITERION 3	CRITERION 4	HQ RPS	OVERALL RANK
1	Identify and evaluate new diagnostic tools for improved classification of pneumonia (ie, different ARI timers, respiratory counting beads, etc.) at the community level that are most appropriate for various CHW cadres.	0.89	0.92	0.87	0.96	91.09	5
2	Evaluate the effectiveness of 3–day vs 5–day amoxicillin treatment regimens in Africa.	0.83	0.90	0.92	0.94	89.83	6
3	Assess perceptions of beneficiaries and levels of community satisfaction in CHWs' capacity to diagnose and treat sick children (with malaria, pneumonia, diarrhea and severe malnutrition) at the community level.	0.86	0.96	0.94	0.71	86.90	1
4	Identify and evaluate strategies for improving referral between communities and health facilities, including referral compliance.	0.79	0.94	0.85	0.90	86.86	3
5	Evaluate the effectiveness and feasibility of CHWs use of pulse oximetry to identify children with severe pneumonia.	0.90	0.89	0.79	0.89	86.57	40
HQ/HIC – organizational headquarters or high-income countries, RPS – research priority score, iCCM – integrated community case management, CHW – community health worker							
<b>Table 5.</b> Top 5 research priorities by LMIC participants							
COUNTRY RANK	RESEARCH QUESTION	CRITERION 1	CRITERION 2	CRITERION 3	CRITERION 4	COUNTRY RPS	OVERALL RANK
1	Identify the primary barriers to CHW supervision and develop and evaluate strategies to motivate CHW supervisors to provide continuous support to CHWs.	0.89	0.98	0.92	0.94	93.10	9
2	Identify determinants of non-use of iCCM services by caretakers and develop strategies to increase the uptake of iCCM.	0.90	0.95	0.96	0.90	92.61	4
3	Identify and evaluate determinants of quality of CCM services, including characteristics of health systems (and supporting environment) that are most important for delivering high quality iCCM programs at-scale with limited external support.	0.85	0.94	0.94	0.98	92.55	22
4	Identify and evaluate strategies for retention and motivation of CHWs.	0.92	0.96	0.85	0.96	92.27	2
5	Identify and evaluate innovative strategies to improve community engagement and mobilization for CCM.	0.84	0.99	0.96	0.90	92.19	7
LMIC – low- and middle-income countries, RPS – research priority score, iCCM – integrated community case management, CHW – community health worker							

This example illustrates well the phenomenon of researcher positionality. It appears that the closer one gets, and the longer one is exposed, to implementation of interventions and programmes, the more the key interfaces with users and the health system as the vehicle for implementation come into focus, and the more “macro” the research questions. The greater the distance from implementation, the more the background context recedes, the more the interventions become segmented into component parts, and the “micro” level research questions, focused on individual clinical and technical actions, are prioritised.

The approach and orientation I have taken to research on CHWs (and other phenomena) in health systems is fundamentally shaped by my own positionality. I trained as a public

health specialist in the pre-1994 era<sup>11</sup> and was heavily influenced, on the one hand, by the 1978 Alma Ata Declaration on Primary Health Care, and on the other hand, by the radical critiques of the political economy of apartheid health and health care in the internal anti-apartheid movement at the time. I joined the Community Health Department (later becoming the School of Public Health) at Wits University in the late 1980s after a few years as a clinician, eventually settling in its Centre for Health Policy, where I remained for 15 years. From this position, and with many others of my generation, I became immersed in the “problematique”<sup>12</sup> of health sector transformation in South Africa, after the liberation movements were unbanned in 1990 and a new government installed in 1994. This involvement took different forms – from participation in task teams and commissions developing policy, to evaluating implementation of new policy, generating research evidence to influence policy, to a more distant, researcher stance on health system dynamics. It involved a significant shift, from critiquing the apartheid health system, with its tidy dualisms (for/against, past/future, right/wrong), to engaging the practical, everyday and imperfect real world of change in the “new” South Africa, requiring a more nuanced and reflective mindset.

Over the last 25 years, I have been associated with three other universities apart from Wits – Free State (where I held an honorary position for 8 years), Cape Town and Western Cape. In these various capacities and across time and space, I have observed the emergence of significant threats to South Africa’s health system (most tragically the HIV epidemic), the dynamics of inertia and change, and endless cycles of new ideas and initiatives (only a few of which survived the test of time). I have also been able to observe how the big policy shifts – such as free PHC, universal access to ART, and increases to health worker salaries – have almost always involved political pressure and political windows of opportunity. Finally, I have seen how South Africa’s quasi-federal system makes it difficult to impose change, through edict, on lower levels of the system, and the importance of negotiation, accommodation and adaptation in achieving change.

The implications of this positionality is that I have a tendency to take a macro-perspective on health systems, to focus on its social and political rather than technical/clinical dimensions, to see path dependence (Paina & Peters 2012) rather than

---

<sup>11</sup> i.e. Prior to the advent of democratic rule in 1994

<sup>12</sup> “The complex of issues associated with a topic, considered collectively”  
<https://en.oxforddictionaries.com/definition/problematique>

a “tabula rasa”, and to appreciate the differences within the system. I have a greater interest in studying emergence and evaluating policy than in testing interventions through experimental studies; and a greater propensity for seeking patterns in stories and thick descriptions than in statistical analyses.

I describe this positioning as “embedded country researcher” – as placed, for long durations, between the policy/practice and research environment of one country and its specific issues and challenges, even if conceptually and theoretically informed by global thinking. Embedded health systems research refers to a “focus [which] is less on external power relations with funders and outside researchers but on internal relations between different kinds of stakeholders, such as between government officials and researchers” (Macgregor & Bloom 2016:3). In its Strategy on Health Policy and Systems Research, the WHO refers to embeddedness as one of the distinguishing features of health policy and systems research, and a central characteristic of countries that have achieved successful reforms to their health systems (WHO 2012). It describes embeddedness as “one of close connectivity [between country researchers and policy makers] while maintaining scientific independence in order to retain objectivity in the design, conduct and interpretation of research” (Ibid:14).

As highlighted in Chapter 2 (Literature Review), this perspective is an unusual one in the landscape of research on CHWs and in public health generally<sup>13</sup>, although less so in the growing field of HPSR. It has been made possible by the privilege of choice: living in a middle-income country where I have secure employment in a hitherto stable institution with a critical mass of researchers who share my interests. I am able to draw on national research funding, and I am only partially dependent on funding and consultancies from international agencies. In this respect, South Africa is similar to other middle-income countries such as Brazil and India, with some degree of institutional capacity and resourcing that allows for researcher autonomy and country-led research. It also shares with these countries special geopolitical status and global interest and attention as part of the BRICS (Brazil, Russia, India, China, South Africa) collective.

---

<sup>13</sup> And, I would argue, a knowledge gap (for both countries themselves and global health actors) that has implications for the sustained implementation of effective interventions through complex systems.

## Study design and data collection: the case study method

As indicated at the start of this chapter, the main research strategy employed in this thesis is the case study. This methodology is widely used in the social sciences and is one of the most common approaches in HPSR (Gilson & Raphaely 2008; Gilson 2012). Case studies examine complex phenomena in relation to their contexts, drawing on multiple perspectives and sources of data to construct an account of the phenomena. The “phenomenon” (the “case”) can be a collection of people, an organisation or geographical region, or something less concrete such as decision-making, a policy process, relationships or an intervention (Yin 2014). The case is also referred to as the “unit of analysis” and is the methodological equivalent of aggregate findings of a sample survey in quantitative methods.

Case studies can have exploratory, descriptive or explanatory purposes (Ibid). Exploratory case studies investigate the dimensions of a poorly understood phenomenon in order to develop more specific questions (e.g. relationships in community health systems), descriptive case studies provide an accurate profile of the phenomenon (e.g. governance and leadership roles), while explanatory case studies examine cause effect relationships (e.g. factors influencing policy adoption).

Finally, case studies can be single or multiple, and have holistic or embedded<sup>14</sup> designs. Single holistic case studies can be selected because they are typical or common, or alternatively, because they are “revelatory” or “critical”. Classic examples of the latter are the investigation into the organisational and political failures leading to the space shuttle *Challenger* disaster in 1986 and the Cuban Missile crisis in 1959 (cited in Yin 2014). Cases in a multiple case study can be selected on the basis of being either similar or contrasting instances of the phenomenon. The “replication logic” is thus “literal” (the same) or “theoretical” (contrasting).

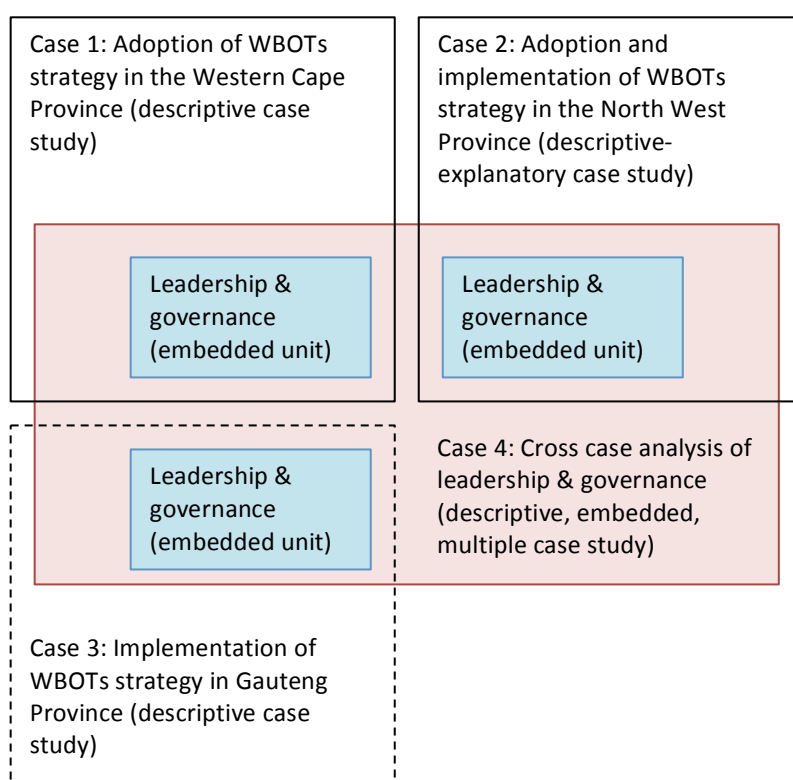
This PhD describes the adoption and implementation of the Ward Based Outreach Team (WBOT) strategy in three provinces of South Africa. It consists of three single, holistic case studies of provincial adoption and/or implementation of the WBOTs

---

<sup>14</sup> The term “embedded” in this context denotes a nested study as opposed to the terms “embedded country researcher” used earlier

strategy, two of which are included as papers in this thesis<sup>15</sup>, and a multiple case study (referred to as “cross case analysis”) of sub-national leadership and governance of WBOTs as an “embedded unit of analysis” in all three provinces (third paper). All three single case studies were descriptive in purpose, seeking to document adoption and/or unfolding implementation of the WBOTs strategy at sub-national level (as the phenomenon or case). The North West provincial case study also had an explanatory component, namely to explain the plausible reasons for (mechanisms of) early adoption and successful implementation. Each of the case studies had an embedded unit of analysis on the leadership and governance of WBOTs, which was combined with the others in a descriptive multiple case study (referred to as an embedded cross case analysis). Each case study was completed and written up first before the cross case analysis was conducted.

The research strategy is represented diagrammatically in Figure 7 below.



**Figure 7: Case Study Strategy**

The selection of North West Province as a case was prompted by its role as a “revelatory”

<sup>15</sup> Case 3 (represented in dotted lines in the diagram below) was not written as a separate paper but included in the cross case analysis.



case of successful adoption and early implementation. The Western Cape case study was a commissioned review by the provincial health department, and the Gauteng case study was nested in a long-standing project within the Province. The three case studies were not funded or implemented as one project and drew on available resources in a national researcher collaboration to describe the “what” and “how” of early implementation of the WBOT strategy at provincial level. The scope and intensity of data collection was thus quite different in each (Table 10). Despite these differences, each case study was concerned with documenting the same phenomenon, and when brought together in a cross case analysis, provided the opportunity to examine the role of governance and leadership in implementation across a range of social and geographical realities and attitudes to the WBOT strategy (Table 10).

**Table 10: Provincial context and data collection**

Province	Context	Provincial attitude to and coverage by WBOT strategy	Data collection
North West	Rural province Population 3.7 million	Enthusiastic adopter followed by rapid implementation. 72.6% coverage of wards by December 2015	27 individual interviews 9 group interviews
Western Cape	Mixed urban and rural areas Population 6.2 million	Initial non-adopter, followed by policy formulation. Not reporting data by December 2015.	113 individual interviews 10 group interviews 23 ‘CHW-day’ observations
Gauteng	Urban Province Population 13 million	Passive adopter, implementation delegated to districts. 54.6% of wards covered by December 2015	In one district: 6 individual interviews 6 in group interview

The data collection strategy is described in each case study paper and summarised in the cross case analysis. In general, data collection involved the collation of documentary evidence (including routine health service data in some), interviews (individually and in groups, open-ended and structured), and observations of practice (in some). The interviews sought to obtain a wide cross section of experiences and viewpoints from senior to frontline provider, policy maker to implementer, and where possible, users and community members. These different perspectives were combined (data triangulation) to create an overall narrative, and brought together with other sources of data (method triangulation). Two of the three individual case studies (Western Cape, North West) had large researcher teams that collectively constructed the key findings (researcher triangulation). All three case studies were sent to study participants for comment and feedback on the plausibility of findings. The cross case analysis involved an iterative

process of pattern matching and explanation building that drew on the similarities (provincial jurisdiction, same policy) and differences across the three case study contexts.

In addition to the provincial case studies, the thesis (in paper 1) also describes the emergence of lay health work and the community-based sector in South Africa, written in the year prior to the formulation of the WBOT strategy. This was in the form of a reflective analysis which combined a literature review, cumulative insights from a number of projects, and a mapping exercise, seeking to contextualise lay health workers from a health system perspective. It is a historical account of community-based services in South Africa that serves as backdrop to the emergence of the WBOT strategy.

Robson (2002) refers to three forms of threat to validity or trustworthiness of case study (and other forms of qualitative) research: description, interpretation and theory. Threats to description lie in inadequate or inaccurate data; threats to interpretation occur when meaning is imposed on data based on the researcher's own preconceived ideas or biases; and threats to theory arise from inadequate consideration of rival explanations or failure to account for "negative" findings that do not support the study conclusions. The macro-level, "whole system" analyses in this thesis are particularly prone to these threats. In such instances it is relatively easy for researchers to construct explanations of organisational capacity and change that make sense, but which on closer scrutiny can be challenged. The processes of triangulation, participant feedback and multiple case study design described above were the main strategies to address these threats and ensure plausibility of the analysis.

Recognising the complexity of the phenomenon being investigated, the case studies also made use of theory and conceptual frameworks. In the Western Cape, an adaptation of the WHO Building Blocks framework (van Olmen et al. 2012) guided data collection and analysis, and in the North West Province, the "simple rules" of whole system change (Best et al. 2012) provided the framing for explaining early adoption of the WBOT strategy. Both made use of notions of system "hardware" and "software" (Sheikh et al. 2011). The cross case analysis drew on the multiple governance framework of Hill and Hupe (2006) in characterising sub-national leadership and governance roles, which also formed the basis for the multilevel framework for the governance and leadership of CHW programmes presented in the discussion (Chapter 5).

All three case studies received approval from university institutional ethics committees and from the respective provincial authorities, which were in support of the case studies and showed keen interest in the findings. Of the three, the Western Cape case study was conducted most closely as a collaborative exercise between researchers and health service managers, with the Province funding the study, and a senior member of the government co-authoring the report and paper. However, research teams consciously retained their independence and at no point was there any attempt at censoring or changing core findings. Standard procedures of informed consent and anonymity were followed for all interviews.

## Chapter 4: Results in the form of published papers

### Paper 1

Schneider H, Lehmann U. Lay health workers and HIV programmes: implications for health systems. *AIDS Care* 2010; 22 (Suppl 1):60-7.

#### Paper overview

This paper is a reflective piece describing the emergence of a lay health worker presence in South Africa's health sector in response to the many needs generated by the HIV epidemic. It draws on a number of research projects conducted by the authors to provide a health system perspective on lay health work in South Africa, its diverse (and sometimes divergent) forms and underlying orientations, and the various attempts to define policy for the sector. It was accepted for publication in late 2009, just months prior to the convening of the ministerial task team which drew up the Primary Health Care Re-engineering Discussion Document and the subsequent adoption of the Ward Based Outreach Team (WBOT) strategy which form the focus of the remaining papers.

#### Contribution to the thesis and novelty

The paper contributes to the first objective of the PhD, which is to describe the emergence of a community-based health sector based on lay health work as a response to the HIV epidemic in South Africa. Although written some time before the other papers, it has been included as it contextualises, in recent history, efforts to reshape the community-based health sector. In particular, it documents the disease-specific and care-oriented origins of this sector, the implications of which are described in subsequent papers. Its novelty lies in its macro and policy/systems orientation, a departure from the micro-oriented research focused on roles and tasks of community health workers.

#### Contribution of candidate

The paper was originally presented by the candidate at a conference on the Social Aspects of Anti-Retroviral Therapy at the University of East Anglia (UK) in 2009, and was one of the papers included in a special supplement of the journal *AIDS Care* arising from the conference. The candidate conceptualised and wrote the piece, with the co-author contributing insights and project material and commenting critically on drafts of the manuscript.

## ART SUPPLEMENT

### Lay health workers and HIV programmes: implications for health systems

H. Schneider<sup>a\*</sup> and U. Lehmann<sup>b</sup>

*<sup>a</sup>Centre for Infectious Disease Epidemiology and Research, School of Public Health & Family Medicine, University of Cape Town, Anzio Road, Observatory, Cape Town 7925, South Africa; <sup>b</sup>School of Public Health, University of the Western Cape, Cape Town, South Africa*

*(Received 7 September 2009; final version received 12 November 2009)*

One of the consequences of massive investment in antiretroviral access and other AIDS programmes has been the rapid emergence of large numbers of lay workers in the health systems of developing countries. In South Africa, government estimates are 65,000, mostly HIV/TB care-related lay workers contribute their labour in the public health sector, outnumbering the main front-line primary health care providers and professional nurses. The phenomenon has grown organically and incrementally, playing a wide variety of care-giving, support and advocacy roles. Using South Africa as a case, this paper discusses the different forms, traditions and contradictory orientations taken by lay health work and the system-wide effects of a large lay worker presence. As pressures to regularise and formalise the status of lay health workers grow, important questions are raised as to their place in health systems, and more broadly what they represent as a new intermediary layer between state and citizen. It argues for a research agenda that seeks to better characterise types of lay involvement in the health system, particularly in an era of antiretroviral therapy, and which takes a wider perspective on the meanings of this recent re-emergence of an old concept in health systems heavily affected by HIV/AIDS.

**Keywords:** lay health workers; home-based care; health systems; HIV

#### Introduction

The growth in global health funding has made possible scaled up access to antiretroviral therapy (ART) in poor countries across the world, not only dramatically altering the lives of many people living with HIV, but also changing the way in which health care is organised and delivered. There now is increasing recognition of the need to examine the broader system impacts of these massive new investments in disease-specific programmes and whether they do achieve their stated goals of “health system strengthening” (WHO Maximizing Positive Synergies Collaborative Group, 2009). In many low-income countries of sub-Saharan Africa, funding for HIV through initiatives such as the Global Fund for HIV, tuberculosis (TB), Malaria and the President’s Emergency Fund for AIDS Relief (PEPFAR) dwarfs spending on the rest of the health system (Marchal, Cavall, & Kegels, 2009) and has the potential to fundamentally alter the nature of provision, organisation, actors and relationships in the health system.

In South Africa, funding from global health initiatives is less dominant than in other Sub Saharan African countries, but still very significant: in 2008/

2009, donor funds contributed roughly 5% of public health spending in South Africa (Blecher, Day, Dove, & Cairns, 2009). This is significant for a middle-income country, especially since much of it is allocated to HIV/TB programmes. Furthermore, since the advent of an antiretroviral access programme in South Africa in 2004, public spending on HIV programmes has increased substantially—annually in real terms by 21.6% (Blecher et al., 2009).

One of the key system-wide effects of large new investments in the HIV response in South Africa and elsewhere has been the growth of lay health worker<sup>1</sup> involvement in the health system and related to this, the emergence of a complex and diverse new “economy of care” (Ogden, Esim, & Grown, 2006) at the boundaries of the formal health and social welfare systems. In a context of general health worker shortages, community members have taken on care roles where care is not available; community-based organisations have sprung up to advocate and support people living with HIV/AIDS (PWA) through new cadres of counsellors and peer supporters; and non-governmental organisations (NGOs) have formed care and support networks which make use of different cadres of lay personnel. This

---

\*Corresponding author. Email: helen.schneider@uct.ac.za

mobilisation of non-professionals has catered for new forms of service provision within health facilities, but has also led to a shift of care from a fragile formal health system to households and communities. "Community-based" services are now an established and growing part of district health system budgets (Blecher et al., 2009) and there is now virtually no primary health care clinic in South Africa without its complement of lay workers, either facility-based or providing home-based care within its catchment area. Health care, most specifically TB and HIV care, would simply be unimaginable without the services of an army of lay health workers. Activities such as counselling and home-based care have become routine functions within the health system and the exclusive preserve of lay health workers, who increasingly occupy a front-line service provision role. Collectively, lay workers represent a new mediating layer between the formal health system and citizens.

Although the South African government has become the main driver and funder of lay health workers, they remain outside of the formal health system and are employed and managed through non-governmental intermediaries. This has resulted in an unregulated and uncoordinated proliferation of cadres with different orientations and skills and playing diverse roles (Friedman, 2005). Approaches to the governance, management and remuneration of lay health workers vary considerably across provinces and localities (Lehmann, Matwa, Schneider, & Colvin, 2009). This fragmentation and the precarious location on the margins of the formal health system have created a host of problems, including the failure to recognise lay workers as health system employees and ensure appropriate systems of remuneration and employment benefits; poor disbursement of funds to employing NGOs; poor integration into primary health care teams; problematic relationships with health professionals and facilities; and inadequate training, support, supervision and career pathing (Samson, 2008; Schneider, Hlophe, & van Rensburg, 2008). Increasingly, there are demands from civil society and policy initiatives by various government departments to address and resolve these issues.

The deployment of lay workers and the problems associated with them are not new phenomena, in South Africa or internationally, but have been around for at least 50 years (Lehmann & Sanders, 2007). There have been innumerable experiences throughout the world with programmes ranging from large-scale national programmes to small-scale community-based initiatives. In the years following the 1978 Alma Ata Declaration on Primary Health Care, community health workers (CHW) were promoted and became a part of many developing

country health systems, but fell out of favour, largely due to unrealistic expectations and lack of adequate planning, management and reliable funding (Gilson et al., 1989; Walt, 1990). While early programmes emphasised the role of CHWs not only as health care providers, but also as advocates for the community and agents of social change, today's programmes emphasise their health service delivery and community management function (Lehmann & Sanders, 2007).

The current wave of enthusiasm for lay workers, especially in sub-Saharan Africa,<sup>2</sup> is in response to the need for a readily available and inexpensive workforce that can perform new tasks associated with disease-specific initiatives. Much of the debate around lay workers is thus centred on the access gains and technical feasibility of using them to provide specific services such as TB care, HIV testing or ART-related support. Research has tended to focus on the safety and efficacy of deploying lay workers for particular problems (Lewin et al., 2005) or the possibilities of "task shifting" (WHO/UNAIDS/PEPFAR, 2008) important issues in their own right. However, these debates make little reference to the social and systems impact of the presence of new providers and services on such a wide scale, or to their role and location as mediators between the formal health services and communities.

Using South Africa as a case, this paper discusses the different forms, traditions and sometimes contradictory orientations taken by lay health work, the system-wide effects of a large lay worker presence, and the difficulties of imposing coherence and uniformity, through policy, on such a field. It argues for research that seeks to better characterise types of lay involvement in the health system, particularly in an era of ART, and which takes a wider perspective on the meanings of this recent re-emergence of an old concept within developing country health systems.

## Methods

The paper's primary purpose is to contextualise current debates on lay work from a health system perspective. It draws on insights gained from projects in which the authors participated over the last few years. These included:

- A national mapping exercise of lay health workers linked to public sector initiatives, conducted in late 2008 (Lehmann et al., 2009).
- A longitudinal study of changing lay health worker experiences in the Free State Province (Hlophe & Schneider, 2007; Schneider et al., 2008).

- A case study of lay worker programme practices in a rural Eastern Cape district (Lehmann & Matwa, 2008).

In addition, the paper makes use of a considerable body of published work – grey and indexed – on different types of lay workers in the South African setting, including “directly observed therapy, short course (DOTS) supporters” for TB, lay counsellors, home-based carers and generalist CHWs.

The paper begins by providing a profile of growing lay health worker presence in the South African health system; it considers in more detail the different types of lay health workers and their orientations. The paper then discusses possible systemic impacts of lay work and policy responses to this, and concludes by proposing a health system-relevant research agenda on lay health workers.

### **Profile of lay health workers in the South African health system**

In a field characterised not only by rapid change, but also by blurred boundaries between household caring, volunteerism and regular labour, quantifying the lay health worker contribution to the health system is not easy. However, the evidence does show:

1. A rapid growth in numbers of lay workers linked to South Africa’s public health system from 2000 onwards.
2. A numerically significant presence relative to professional health workers.
3. The highly gendered profile of lay workers.

Prior to the advent of HIV in South Africa there were a number of small scale, generalist CHW programmes across the country, employing a limited number of workers, estimated at around 5600 (Cruse, 1997). Interestingly, several of these models were anchored within the formal health system. In Limpopo Province, for example, “care-group facilitators”, employed through a local hospital, mobilised a massive volunteer network of “care groups” (Cruse, 1997). Despite proposals for scaling up CHWs by these programmes, however, they received little moral or financial support from the newly elected post apartheid government, and many subsequently folded (Friedman, 2005). From the mid to late 1990s, influenced by models in other parts of south and eastern Africa, non-governmental and faith-based “home-based care” projects began to emerge across the country, using lay workers to provide palliative care to HIV-infected people and support for their orphaned children. In parallel developments, lay

counsellors started being trained to work in AIDS Training, Information and Counselling Centres in a number of municipalities, and projects experimenting with the idea of community “DOTS<sup>3</sup> supporters” for TB care were established.

These various initiatives provided the precedents and templates for a new generation of lay health workers in South Africa, and in 2000, national government began allocating ring-fenced grants to expand “home and community-based care” (HCBC) and “voluntary counselling and testing (VCT)” in health facilities (Hickey & Whelan, 2001). From then on there was a rapid growth in state supported non-profit organisations (NPOs) employing “community care givers (CCG)” in both health and welfare sectors. Titles, training and functions corresponding to specific services – VCT counsellors, child care workers, home-based carers, DOTS supporters, ART adherence counsellors – to name a few, were introduced. In 2002, a national audit counted a total of 31,565 carers in the two sectors (Department of Health & Department of Social Development [DOH & DSD], 2003); by 2004 the figure had gone up to 40,000 (DOH, 2004), and rising to 65,000 in 2006 (DOH, 2006). In 2007/2008, an estimated 65,000 “work opportunities” were reportedly provided through NPOs in the health sector alone (DOH/DSD, 2009).

A mapping exercise conducted at the end of 2008 sought to establish more precisely the numbers and roles of lay workers employed on a regular basis in the public health system (Lehmann et al., 2009). This inventory identified a total of 1636 NPOs funded by contracts with provincial health departments, employing close to 40,000 lay workers (Table 1). This excludes many, difficult to quantify, workers in “unlinked” initiatives funded through a sizeable donor presence in HIV/AIDS and TB or volunteers in small community-based organisations. To place the numbers in perspective, in 2008, the public health sector employed 48,000 professional nurses and 10,700 medical practitioners (Day & Gray, 2008), only a proportion of who work in the primary health care system. Lay workers are thus now as numerically significant, if not more so, than other categories of health professionals.

While the majority of lay workers are categorised as specialist HIV/TB workers, there is a trend towards embracing more generalist notions of CHWs, that can assume a number of functions beyond HIV/TB (Table 1) such as community integrated management of childhood illness (IMCI), chronic non-communicable disease support groups and rehabilitation. This gradual widening of competencies was evident in a longitudinal study of lay workers in 16 localities conducted in one province, Free State between 2004 and 2007 (Hlophe &

Table 1. Non-profit organisations (NPOs) and lay health workers contracted by provincial health departments, 2008.

	NPOs	Percentage	Lay workers	Percentage
HIV/TB workers	1122	68.6	21,732	56.9
Generalist CHW	302	18.5	12,325	32.3
Other, e.g., mental health workers	212	13.0	4112	10.8
Total	1636	100	38,169	100.0

Source: Lehmann et al. (2009).

Schneider, 2007). At baseline, the majority (75%) of lay workers had separate identities as “lay counsellor”, “home-based carer” or “DOTS supporter”. By 2007, the reverse was true: 87% had received training, and regarded themselves, as a combination of all three. In this study, 93% of the lay workers were female, reflecting patterns elsewhere in the country (Akintola, 2006; Friedman et al., 2007).

### Origins and forms of lay work

As alluded to, lay workers form a diverse mix of histories, orientations and purposes, despite the blending of forms and their shared status outside of the formal health system.

Home-based care was introduced to promote care-giving in the home, with support from home-based carers trained in basic palliative care. As stated in DOH (2001, p. 2) guidelines: “As more people become ill, many will not be able to stay in hospitals, hospices or other institutions for care. It is also recognised that South Africa has limited health care resources. Situations will arise where, even if hospital or other institutional care may be the best response to an individual’s condition, it may not be available to him/her.” Home-based care aimed to shift burdens of care, particularly terminal care from the formal health system, to semi-formal agents of care in private, non-governmental organisations and to households. With a few notable exceptions (Uys, 2002), the practice of home-based care implied delegating responsibility for death and dying to household members, generally women, who had to manage the difficult and deeply stressful process with little external support (Akintola, 2006; Hunter, 2006). Couched in a language of a seamless “continuum of care” (WHO, 2002) between health system, community and home, and drawing on “communitarian” ideas of reciprocity and caring in African culture, it’s more “profane” (Marais, 2005) or real role was to legitimate the widespread practice of turning people with end stage AIDS away from overburdened health facilities.

Lay counsellor training in South Africa has its roots in a somewhat different tradition. It emerged from a professional base of psychology in counselling

and testing centres. As described by Rohleder and Swartz (2005, p. 398), “Counsellors are trained in a client-centred approach to counseling...[which] emphasizes the centrality of the counsellor-counsee relationship and aims to develop counsellors who respect the position of those they counsel without imposing their own values.” In practice, “a mixture of client-centred and more directive, health-advising counselling techniques tend to be used”. Lay counsellors form the basis of the HIV VCT service, and since 2004 have provided treatment preparation and support for people enrolled in the ART programme. The approach to “adherence counselling”, adopted in the ART programme was also influenced by models such as that of the Médecins-Sans-Frontières/Treatment Action Campaign (MSF/TAC)-supported Khayelitsha programme that drew on notions of rights from the AIDS social movement – the right to treatment and care, social support and information (Schneider & Coetzee, 2003). This tradition has favoured the enrolment of “expert patients”, people living with HIV or TB who have successfully negotiated care, as adherence counsellors. The management of adherence in the ART programme thus evolved in a manner distinct from that of the TB programme (see below). It emphasised building patient knowledge and autonomy through “treatment preparation”, and the mobilisation of social networks through support groups and nomination of treatment supporters.

While ART adherence counselling aims to achieve an internalised responsibility for adherence to ART, “directly observed therapy (DOT)” of TB, as the name implies, is a form of external supervision. Its roots in a public health tradition of patient and programme monitoring is succinctly captured by Wilkinson, Davies, and Connolly (1996) who write: “The patient visits his or her supervisor twice weekly and ingests the treatment under direct observation; the visit is recorded by the supervisor who holds the patient’s treatment card. A field worker visits each supervisor monthly to collect data on absconders, deaths, and patients who have completed treatment.” The practice of DOT has been questioned as not evidence-based, creating barriers to access by forcing patients to travel to DOT supervisors to get



treatment, and undermining patient autonomy (Porter & Ogden, 1997; Volmink & Garner, 2007). Although the name DOTS remains firmly institutionalised, its practice has evolved into a less authoritarian concept involving choice and support for patients (see for example, Clarke, Dick, Zwarenstein, Lombard, & Diwan, 2005; Maher, 2003; Marq, Theobald, Dick, & Dembele, 2003).

In contrast to other types of lay work, counselling is a predominantly facility-based activity in South Africa. While home-based care has become more general in focus, HIV counselling has tended to remain a core specialised function in the health system, and lay counsellors constitute roughly 10% of the total of lay workers (Lehmann et al., 2009). Lay counsellors are often paid more (Lehmann et al., 2009), and may express a higher degree of professional efficacy than home-based carers (Schneider et al., 2008), despite still experiencing a lack of recognition from other health professionals (Rohleder & Swartz, 2005).

These various forms of lay work are summarised in Table 2 below. It is clear that they embody different and at times contradictory notions of access and entitlement, as well as expectations of patients, and ultimately, meanings of “therapeutic citizenship” (Nguyen, 2007). HCBC signals a limit to claims on the health system, even in its more generalist contemporary versions, and has lost much of the ideas of community mobilisation associated with earlier generations of CHW programmes. Antiretroviral (and increasingly TB) programmes and the agents associated with them, on the other hand, represent a paradigm shift back towards a rights-based approach of expanding entitlements through the formal health system and increased investment in primary health care programmes.

## Policy

Although initially premised on a model of voluntary contribution, a growing dependence on the labour of lay health workers for the every day functioning of the health system led to a series of shifts in the policy environment. Policy initiatives on lay workers have been launched from several components of government, including an “Expanded Public Works Programme” and the DSD and DOH. In 2003, the DOH released a CHW framework proposing the institution of “stipended” volunteers and setting a minimum stipend level of R1000 per month (DOH, 2003). A more recent version, referred to as the “CCG policy framework” (now in its fourth draft), goes one step further and seeks to recognise lay workers as regular employees, subject to provisions of labour law (DOH/DSD, 2009). One estimate suggests that full funding of employees in community-based services would require an increase of 1.3% to current public health expenditure (Blecher et al., 2009). In addition, it seeks to align diverse practices towards lay workers in provincial governments by creating one overarching concept of CCGs that incorporates all lay worker cadres, provided with a uniform and relatively low level of training as generalists, and united by their common mode of state engagement through NPO intermediaries. While still in draft form, and one of several policy proposals, the draft CCG policy framework is indicative of approaches to the future of lay workers in at least part of the state. That is, the desire to sharpen the distinction between “lay” and other work, and consolidate the community “care economy” outside of the formal health system. This appears at odds with an HIV programme that has as a core objective improving access to antiretroviral treatment and other care services within the formal health system.

Table 2. The origins, purpose and values underlying different forms of HIV/TB-related lay work in South Africa.

	Origins	Purpose	Values
Home-based care	Volunteering faith-based, hospice	Care in the home	Dehospitalisation, self-reliance
Lay counselling	Psychology/social work	Testing, psycho-social support, advice	Client-centred, autonomy
ART adherence counselling	Human rights, PWA movements	Adherence/retention in care	Empowerment, self management
Advocacy/activism	PWA movements	Increase access, mediate care, mutual support	Human rights, expert patients
DOTS <sup>a</sup> support	Public health	Adherence	Patient supervision

Note: PWA, people living with HIV/AIDS; DOTS, directly observed therapy, short course.

### Implications for health systems

The state's attitude to lay health workers is thus ambiguous. On the one hand, by locating them firmly outside of the boundaries of the formal health system it perpetuates a state of marginalisation and re-enforces the divide between "home community-based care" and other forms of care provision. Despite their centrality to the functioning of the primary health care system, lay workers continue to be excluded from health sector human resource and service planning frameworks; there is no standardised training and few opportunities for career pathing (Lehmann, 2008) and little obligation to define roles and normalise relationships with other health professionals, for the most part still highly precarious (Rohleder & Swartz, 2005; Schneider et al., 2008); the funding of NPOs employing lay workers is still heavily donor dependent (Lehmann et al., 2009) and external contracts with small suppliers (including NPOs) are the first to suffer when provincial governments have cash flow problems. Lay health workers thus remain a low status, flexible and semi-formal workforce on the margins of the health system, that can expand and contract easily as circumstances change.

Collectively, the growth of lay work represents an informalisation of essential health care delivery in South Africa's public health system, consequent on reduced state expenditure and the devastating impact of the HIV epidemic. As Marais (2005, p. 65) suggests: "The ascendancy of home- and community-based care needs to be understood in a wider historical context. Generally, the ethic of care as a household and community responsibility – its veritable 'privatization', consigning it to the sphere of the home – has coincided with the increasingly implacable subordination of social life to the rules of the market. Many of the assumptions and injunctions surrounding home-based care (and by extension also coping) dogma fit snugly with neoliberal discourse".

On the other hand, the state's acknowledgement of its responsibility to support the care economy, even if indirectly, suggests recognition of the centrality of lay work to the formal health system's functioning. In doing so, it opens the space for further claims on part of lay workers, who believe themselves to be employed by the state (Schneider et al., 2008), if not state employees. Pressures for greater incorporation into the formal sector will thus remain. There is also a limit to which national government, through its policy directives, can engineer boundaries between sectors and shape perceptions of rights and entitlements, particular in the context of a constitution that promises the progressive realisation of social and

economic rights, an active civil society, the fiscal space for some degree of manoeuvre with regard to social policy, and decentralised decision-making in a federal political system.

If the forms and training of lay workers outlined above have their roots in different ideological traditions and expectations, the *practice* of lay work tends to be complex, fluid and heterogenous, defying attempts to develop a one-size-fits-all package of services or mode of regulation (Daniels, Van Zyl, Clarke, Dick, & Johansson, 2005; Henderson, 2008; Uys, 2002). This is true in South Africa as much as elsewhere in the world. In the plural health care environment of Bangladesh, for example, Standing and Chowdhury (2008, pp. 2104–2105) identified four models of community-based health agents: (1) a generic agent associated with a reputable supervisory agency; (2) a specialist cadre working with particular health conditions; (3) an expert advocate; and (4) a mobiliser or facilitator who can mediate between users and health markets.

The ability to be a successful home and community-based carer, in fact, is partly premised on moving beyond a stereotypical caring function and possessing sufficient "systems knowledge" and moral authority to broker access to services such as health care or social grants. There is also anecdotal evidence of the role of lay workers, individually or in collectives extracting greater accountability from local health services. For example, in her fine ethnographic study of a rural area in Kwazulu-Natal, Henderson (2008) describes the skilled actions of a carer in exposing and forcing the resignation of a nurse illegally selling drugs to the community. It is through such actions that lay workers may reclaim their roles as advocates and mobilisers for communities. The answer to growing informalisation is thus not necessarily wholesale incorporation into the formal health system.

### Conclusions

Lay workers have re-emerged as significant phenomenon in health systems over the last decade, largely in response to new funding for disease specific programmes and in a context of health worker shortages. They have become essential players in the provision of health care and form part of a broader mobilisation of community and non-governmental participation in the health system, precipitated in sub-Saharan Africa by the HIV epidemic.

The overall health systems impact of this organic and highly plural development is not easy to determine, let alone regulate or shape. However, the emergence of lay workers in South Africa does offer opportunities for improved access and quality of care.

Harnessing this potential requires recognising their role as integral to the formal health system and as more complex than a one-way delegation of tasks that this system no longer perceives to be its responsibility. If broader roles are accepted, a more formalised lay health worker infrastructure may lay the ground for new negotiated orders with local health services and a strengthening of primary health care. In addition, the diversity of forms and approaches to governance at sub-national level cannot be wished away in the short term. National policy initiatives seeking to create coherence by establishing one approach to lay work and flattening difference may have the unintended consequence of raising expectations without addressing underlying problems.

Much of the discussion on lay work in South Africa is occurring in the dark. A better understanding of this complex and rapidly changing phenomenon is urgently needed. Observational and intervention research on the safety, efficacy and cost effectiveness of lay workers in taking on new “task-shifted” roles, the limits to which lay workers can assume multiple roles and still perform adequately, requisite training and support structures, and the balance between generalist and specialist roles, are all important. There is also a need for health services research to better understand the multiple forms and entry points into lay and professional health work and ways of articulating them through both differentiated and permeable career pathways.

However, if appropriate policy is to be developed, a broader systemic view of lay work and the care economy is also required, through research that takes a social and institutional perspective on lay health workers and their roles at the interface between formal health services and civil society. The growth of lay work has created new roles, interests and power relations within the health system. Little is known of this new “industry”, its changing forms and organisation, capabilities, networks and orientations. These have to be understood from multiple perspectives, including those of users and their households, lay workers, non-governmental and community-based organisations, professional providers and the health system as a social institution.

## Notes

1. Lewin et al. (2005) define lay workers as “any health worker carrying out functions related to health care delivery; trained in some way in the context of the intervention; and having no formal professional or paraprofessional certificated or degreed tertiary education.” The use of the term “lay health worker” in this

paper is deliberate and is used to denote their structural position as the opposite of “professional” health workers.

2. This situation is somewhat different to that of Latin America and Asia where generalist CHW programmes remain important components of country health systems (Rohde et al., 2008).
3. DOTS stands for “directly observed therapy, short course”, the World Health Organization’s model of TB care, implemented in South Africa from the mid-1990s.

## References

- Akintola, O. (2006). Gendered home-based care in South Africa: More trouble for the troubled. *African Journal of AIDS Research*, 5(3), 237–247.
- Blecher, M.S., Day, C., Dove, S., & Cairns, R. (2009). Primary health care financing in the public sector. In P. Barron & J. Roma-Reardon (Eds.), *South African health review 2008* (pp. 179–194). Durban: Health System Trust.
- Clarke, M., Dick, J., Zwarenstein, M., Lombard, C.J., & Diwan, V.K. (2005). Lay health worker intervention with choice of DOT superior to standard TB care for farm dwellers in South Africa: A cluster randomised control trial. *International Journal of Tuberculosis and Lung Disease*, 9(6), 673–679.
- Cruse, D. (1997). *Community health workers in South Africa: Information for provincial policy makers*. Durban: Health Systems Trust.
- Daniels, K., Van Zyl, H., Clarke, M., Dick, J., & Johansson, E. (2005). Ear to the ground: Listening to farm dwellers talk about the experience of becoming lay health workers. *Health Policy*, 73, 92–103.
- Day, C., & Gray, A. (2008). Health indicators. In P. Barron & J. Roma-Reardon (Eds.), *South African health review 2008* (239–396). Durban: Health System Trust.
- Department of Health (2001). *National guidelines on home-based care and community-based care*. Pretoria: Author.
- Department of Health (2003). *Community health workers policy framework*. Pretoria: Author.
- Department of Health (2004). Speech by Minister of Health, Dr Manto Tshabalala-Msimang, at the launch of the community health worker programme, 26 Feb 2004.
- Department of Health (2006, July 7). *Social sector cluster media briefing*. Pretoria: Author. Retrieved September 4, 2009, from <http://www.doh.gov.za/docs/pr/2006>
- Department of Health, & Department of Social Development (2003). *Appraisal of home community based care projects in South Africa 2002–2003*. Pretoria: DSD.
- Department of Health/Department of Social Development (2009). *Community care giver policy framework for home community based care*. Draft 4.0. Pretoria: Department of Health.
- Friedman, I. (2005). Community health workers and community care-givers: Towards a model of unified practice. In P. Ijumba & P. Barron (Eds.), *South African health review 2005* (176–189). Durban: Health Systems Trust.

- Friedman, I., Ramalepe, M., Matjis, F., Bhengu, L., Lloyd, B., Mafuleka, A., et al. (2007). *Moving towards best practice: Documenting and learning from existing community health/care worker programmes*. Durban: Health Systems Trust.
- Gilson, L., Walt, G., Heggenhougen, K., Owuor-Omondi, L., Perera, M., Ross, D., et al. (1989). National community health worker programmes: How can they be strengthened? *Journal of Public Health Policy*, 10(4), 518–532.
- Henderson, P. (2008). 'Touching my bones': *AIDS, intimacy and care in rural KwaZulu-Natal*. Unpublished manuscript.
- Hickey, A., & Whelan, P. (2001). *HIV/AIDS and budget 2001*. Budget Brief no. 62. IDASA – Budget Information Service. Retrieved September 4, 2009, from [www.idasa.org.za/bis](http://www.idasa.org.za/bis)
- Hlophe, H., & Schneider, H. (2007, October). *Community health workers in the free state: Integral members of the primary health care system?* Paper presented to the Roundtable Conference: Health Systems Strengthening and ART, University of the Free State, Bloemfontein, South Africa.
- Hunter, N. (2006). Crises in social reproduction in a developmental state: Home-based care in KwaZulu-Natal. Centre for Civil Society Colloquium on the Economy. *Society and Nature*, 1–18.
- Lehmann, U. (2008). Strengthening human resources for primary health care. In P. Barron & J. Roma-Reardon (Eds.), *South African health review 2008* (163–178). Durban: Health System Trust.
- Lehmann, U., & Matwa, P. (2008). *Exploring the concept of power in the implementation of South Africa's new community health worker policies: A case study from a rural district*. EQUINET Discussion Paper Series 63. Harare: EQUINET, CHP.
- Lehmann, U., Matwa, P., Schneider, H., & Colvin, C. (2009). *A map of community care giver programme practices in provincial health departments*. Report to the Health Systems Sub-committee of the South National Aids Council (SANAC). Cape Town: UWC/IDEU.
- Lehmann, U., & Sanders, D. (2007). *Community health workers – what do we know about them? The state of the evidence on programmes, activities, costs and impact on health outcomes of using community health workers*. Evidence and Information for Policy, Department of Human Resources for Health. Geneva: WHO.
- Lewin, S.A., Dick, J., Pond, P., Zwarenstein, M., Aja, G., van Wyk, B., et al. (2005). Lay health workers in primary and community health care. *Cochrane Database Systematic Review*, 25(1), D004015.
- Maher, D. (2003). The role of the community in the control of tuberculosis. *Tuberculosis*, 83, 177–182.
- Marais, H. (2005). *Buckling: The impact of HIV in South Africa*. Pretoria: Centre for the Study of AIDS, University of Pretoria.
- Marchal, B., Cavall, A., & Kegels, G. (2009). Global health actors claim to support health system strengthening – is this reality or rhetoric? *PLoS Medicine*, 6(4), e1000059.
- Marq, J., Theobald, S., Dick, J., & Dembele, M. (2003). An exploration of the concept of directly observed treatment (DOT) for tuberculosis patients: From a uniform to a customised approach. *International Journal of Tuberculosis and Lung Disease*, 7, 1–7.
- Nguyen, V.K. (2007). Adherence as therapeutic citizenship: Impact of the history of access to antiretroviral drugs on adherence to treatment. *AIDS*, 21(Suppl. 5), S31–S35.
- Ogden, J., Esim, S., & Grown, C. (2006). Expanding the care continuum for HIV/AIDS: Bringing carers into focus. *Health Policy and Planning*, 21(5), 334–342.
- Porter, J.D.H., & Ogden, J.A. (1997). Ethics of directly observed therapy for the control of infectious diseases. *Bulletin de l'Institut Pasteur*, 95, 117–127.
- Rohde, J., Cousens, S., Chopra, M., Tangcharoensathien, V., Black, R., Bhutta, Z.A., et al. (2008). 30 years after Alma Ata: Has primary health care worked in countries? *Lancet*, 372, 950–961.
- Rohleder, P., & Swartz, L. (2005). 'What I've noticed what they need is the stats': Lay HIV counsellors' reports of working in a task-orientated health care system. *AIDS Care*, 17(3), 397–406.
- Samson, M. (2008). *Organising health home and community based workers in South Africa*. Consultancy Report. Johannesburg: Naledi.
- Schneider, H., & Coetzee, D. (2003). Strengthening the health system and ensuring equity in the widescale implementation of an antiretroviral therapy programme in South Africa (editorial). *South African Medical Journal*, 93(10), 772–773.
- Schneider, H., Hlophe, H., & van Rensburg, D. (2008). Community health workers and the response to HIV/AIDS in South Africa: Tensions and prospects. *Health Policy and Planning*, 23(3), 179–187.
- Standing, H., & Chowdhury, M. (2008). Producing effective knowledge agents in a pluralistic environment: What future for community health workers? *Social Science and Medicine*, 66, 2096–2017.
- Uys, L. (2002). The practice of community caregivers in a home-based HIV/AIDS project in South Africa. *Journal of Clinical Nursing*, 11, 99–108.
- Volmink, J., & Garner, P. (2007). Directly observed therapy for treating tuberculosis. *Cochrane Database of Systematic Reviews*, (4), CD003343.
- Walt, G. (Ed.). (1990). *Community health workers in national programmes: Just another pair of hands?* Philadelphia: Open University Press.
- WHO (2002). *Community home-based care in resource-limited settings: A framework for action*. Geneva: Author.
- WHO Maximizing Positive Synergies Collaborative Group (2009). An assessment of interactions between global health initiatives and country health systems. *The Lancet*, 373(9681), 2137–2169.
- WHO/UNAIDS/PEPFAR (2008). *Task shifting: Global recommendations and guidelines*. Geneva: WHO. Retrieved September 4, 2009, from [http://www.who.int/healthsystems/task\\_shifting/en/index.html](http://www.who.int/healthsystems/task_shifting/en/index.html)
- Wilkinson, D., Davies, G.R., & Connolly, C. (1996). Directly observed therapy for tuberculosis in rural South Africa, 1991 through 1994. *American Journal of Public Health*, 86, 1094–1097.

Copyright of AIDS Care is the property of Routledge and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

## **Paper 2**

Schneider H, Schaay N, Dudley L, Goliath C, Qukula T. The challenges of reshaping disease specific and care oriented community based services towards comprehensive goals: A situation appraisal in the Western Cape Province, South Africa. *BMC Health Services Research*. 2015; 15(1): 436

### **Paper overview**

This paper is the first of three provincial case studies described in the thesis, and is in the form of a situation appraisal of community-based services in the Western Cape Province. It was conducted as the provincial health department was developing a new strategic direction for the health sector (referred to as Healthcare 2030), including the shift to comprehensive community-based services, modelled on the national Ward Based Outreach Strategy. Using a health systems framework, combined with an actor-centred approach, the paper maps the current status, and design and implementation challenges of adopting the new policy, arising in part from the way the sector emerged (as outlined in paper 1). It also highlights the strategic management and policy development role at sub-national level in community health worker programmes at scale.

### **Contribution to the thesis and novelty**

Its contribution is specifically to the second objective of the PhD: To examine the implications of a care-oriented and disease-specific community-based sector for the adoption of the WBOT strategy as a comprehensive CHW programme integrated into the PHC system. However, it also contributes to the remaining objectives by evaluating contextual factors enabling successful adoption and implementation of the WBOT strategy, and in adding governance and leadership roles and insights to the subsequent cross case analysis. Its novelty lies in a description of the difficult interface and different rationales operating between an HIV-oriented community-based sector and the PHC system. These challenges are likely to be faced by other HIV-affected countries of the region as they seek to integrate their community-based sectors.

### **Contribution of candidate**

The candidate led a team from different higher education institutions in the Western Cape, commissioned by the provincial health department, to review the community-

based health sector in the province. She was the lead author of the technical report arising from the review, on the basis of which the paper was drafted. She conceptualised and drafted the paper, with the co-authors commenting critically on drafts of the manuscript.

Note: The three papers which follow all repeat the basic description and context of the WBOT strategy already outlined in the introduction.

RESEARCH ARTICLE

Open Access



# The challenges of reshaping disease specific and care oriented community based services towards comprehensive goals: a situation appraisal in the Western Cape Province, South Africa

Helen Schneider<sup>1\*</sup>, Nikki Schaay<sup>2</sup>, Lilian Dudley<sup>3</sup>, Charlyn Goliath<sup>4</sup> and Tobeka Qukula<sup>5</sup>

## Abstract

**Background:** Similar to other countries in the region, South Africa is currently reorienting a loosely structured and highly diverse community care system that evolved around HIV and TB, into a formalized, comprehensive and integrated primary health care outreach programme, based on community health workers (CHWs). While the difficulties of establishing national CHW programmes are well described, the reshaping of disease specific and care oriented community services, based outside the formal health system, poses particular challenges. This paper is an in-depth case study of the challenges of implementing reforms to community based services (CBS) in one province of South Africa.

**Methods:** A multi-method situation appraisal of CBS in the Western Cape Province was conducted over eight months in close collaboration with provincial stakeholders. The appraisal mapped the roles and service delivery, human resource, financing and governance arrangements of an extensive non-governmental organisation (NGO) contracted and CHW based service delivery infrastructure that emerged over 15–20 years in this province. It also gathered the perspectives of a wide range of actors – including communities, users, NGOs, PHC providers and managers - on the current state and future visions of CBS.

**Results:** While there was wide support for new approaches to CBS, there are a number of challenges to achieving this. Although largely government funded, the community based delivery platform remains marginal to the formal public primary health care (PHC) and district health systems. CHW roles evolved from a system of home based care and are limited in scope. There is a high turnover of cadres, and support systems (supervision, monitoring, financing, training), coordination between CHWs, NGOs and PHC facilities, and sub-district capacity for planning and management of CBS are all poorly developed.

**Conclusions:** Reorienting community based services that have their origins in care responses to HIV and TB presents an inter-related set of resource mobilisation, system design and governance challenges. These include not only formalising community based teams themselves, but also the forging of new roles, relationships and mind-sets within the primary health care system, and creating greater capacity for contracting and engaging a plural set of actors - government, NGO and community - at district and sub-district level.

**Keywords:** Community health workers, Lay health workers, Community based services, Community system strengthening, Situation appraisal, Governance, South Africa

\* Correspondence: [hschneider@uwc.ac.za](mailto:hschneider@uwc.ac.za)

<sup>1</sup>School of Public Health, University of the Western Cape; MRC/UWC Health Services to Systems Research Unit, Robert Sobukwe Road, Bellville, Cape Town 7535, South Africa

Full list of author information is available at the end of the article





## Background and rationale

South Africa shares with the rest of southern Africa the presence of a large community based health sector engaged in a wide variety of care, support and advocacy activities [1]. Initially heavily focused on community mobilisations around, and receiving funding for, HIV/AIDS [2], the last few years have seen moves in the region towards greater integration of community based programmes within health systems, and in particular, the formalisation of national community health worker (CHW) programmes [3].

This reflects a global pendulum swing back towards CHWs as a recognised cadre in national health systems. At a special session of the Third Global Forum on Human Resources for Health in Brazil in November 2013, a gathering of key global actors reaffirmed the significant role that CHWs could play in accelerating achievement of the millennium development goals (MDGs) and Universal Health Coverage. It called for the strengthening of CHW programmes and their integration into national health systems [4].

In line with these developments, South Africa is reorienting a loosely structured and highly diverse community care system that evolved around HIV and TB, into a formalized, comprehensive and integrated primary health care (PHC) outreach programme, based on CHWs. A government audit in 2011 counted more than 72,000 facility and community based lay health workers linked to health departments across the country. While heavily funded by government, these workers have been employed and stipended through nearly 3,000 community based organizations [5]. The new proposals, referred to “PHC Re-engineering”, envisage a reorganization of this community based care infrastructure into “PHC Outreach Teams” of CHWs, led by professional nurses and ultimately absorbed into the government staff establishment. The outreach teams will be responsible for a defined number of households and will be accountable to the local health facility. Their roles will be comprehensive: extending beyond HIV/TB to include maternal-child health and chronic non-communicable diseases; they will have a preventive and promotive orientation, and with other sectors and community based providers, will address social determinants of health [6]. PHC Re-engineering is itself located within a broader set of reforms under the umbrella of Universal Health Coverage (referred to as National Health Insurance) in South Africa.

The reorientation and strengthening of an existing, fairly extensive, government supported infrastructure offers many opportunities, but also constraints in the already established status, roles, management systems and governance arrangements of community based services. The strengths and weaknesses and historically shaped nature of existing systems have to be understood

when implementing new policies. While each context is unique, the case of South Africa may offer general lessons for other countries undertaking similar reforms.

This paper examines the implications of the new policy direction of PHC Re-engineering at a sub-national level in South Africa. While a national mandate, provinces have a fair degree of autonomy in adopting and adapting national policy, especially if they are required to mobilise the funding for implementation. The paper thus reports on the findings of an appraisal of community based health services in the Western Cape Province, commissioned by the health department as it was formulating a long term provincial strategy referred to as Healthcare 2030 [7]. Healthcare 2030, developed by provincial policy makers and managers, prioritises strengthening and expansion of community based services in line with national PHC Re-engineering, proposing new norms for availability of community health workers, mid-level cadres and supervisory professionals. It emphasizes an approach focused on prevention, promotion and tackling the social determinants of health, while retaining a “*complementary capacity for curative, rehabilitative and palliative care*” [7]. A notable feature of the Healthcare 2030 Strategy is its emphasis on values and principles: key concepts are person-centredness, continuity and integrated provision, participation, primary health care, district health systems and an outcome-oriented approach. Table 1 below summarises the key policy recommendations envisaged for community based services in Healthcare 2030.

There is considerable international literature on the roles and efficacy of CHWs [8, 9], and to some extent on immediate support systems (e.g. supervision and incentives) required [10], but little evidence on the management of CHW programmes at scale through national health systems [11]. McCord, Liu, & Singh [12] propose that CHW programmes be viewed fully as a sub-system of the health system, embedded within primary health care. Using the WHO “*building blocks*” framework of a health system [13], they outline the elements of this sub-system: service delivery, workforce, information systems, supply systems, finance and leadership and governance. Similarly, in a wide ranging guide on strengthening CHW programmes at scale, Perry & Crigler [14] assert the need for embedding CHW programmes within national and sub-national system contexts, and for planning based on situation appraisals that assess such contexts. They go further than the building blocks approach in emphasizing the relational dimensions of CHW programmes – both in relation to the formal health system and communities.

This paper aims to contribute empirical evidence on the challenges associated with reorienting community based services, which have their origins in disease specific responses to HIV/AIDS and TB, towards the new

**Table 1** Policy recommendations for community based services in Healthcare 2030

Policy dimension	Policy recommendation
Roles	<p>Comprehensive orientation including preventive, promotive, care and rehabilitation;</p> <p>Community based action on determinants of health as part of a broader inter-sectoral focus on wellness;</p> <p>Outcome oriented approach focused on major causes of ill-health in the province: HIV/AIDS and TB, chronic non communicable diseases, violence and injury, mental health, maternal (parent) infant and child health, early childhood development;</p>
Target population	<p>Population based model in which teams are responsible for the health of a defined population (electoral wards in urban/metro areas, sub-district rural areas);</p> <p>Proactive approach to all households;</p>
Links to health care system	Integral part of public primary health care system, supervised and supported by facility based staff;
Team structure and ratios	<p>Each CHW works 8 hours a day and responsible for 270 households;</p> <p>Team of 10 CHWs to be supported by one Clinical Nurse Practitioner;</p> <p>One rehabilitation care worker per 8 CHWs;</p>
CHW training	Core roles and training standardised, based on a nationally accredited curriculum;
M&E system	<p>Standardised M&amp;E systems reporting on key indicators;</p> <p>Use of mHealth strategies for M&amp;E;</p>
Value system	<p>Person/patient centred;</p> <p>Community embeddedness: stable, long term relationships with households which build empathy and trust.</p>

processes and goals outlined in Table 1. Using a systems perspective that focuses both on the structure (the “hardware”) and actor mind-sets and relationships (“software”) [15] of CBS, it appraises the current system with the view to highlighting the key dilemmas and challenges faced by health system stewards in reshaping community based services in new ways.

## Methods

Over a period of eight months (November 2012-June 2013), a team of nine researchers, working in close collaboration with provincial stakeholders, conducted an in-depth appraisal of community based services (CBS) in the Western Cape Province. Western Cape is one of nine provinces in South Africa and has a population of 5.8 million. The health sector is divided into 6 districts (5 rural and one metro) and 32 sub-districts. The sub-district (or sub-structure as it is referred to in the

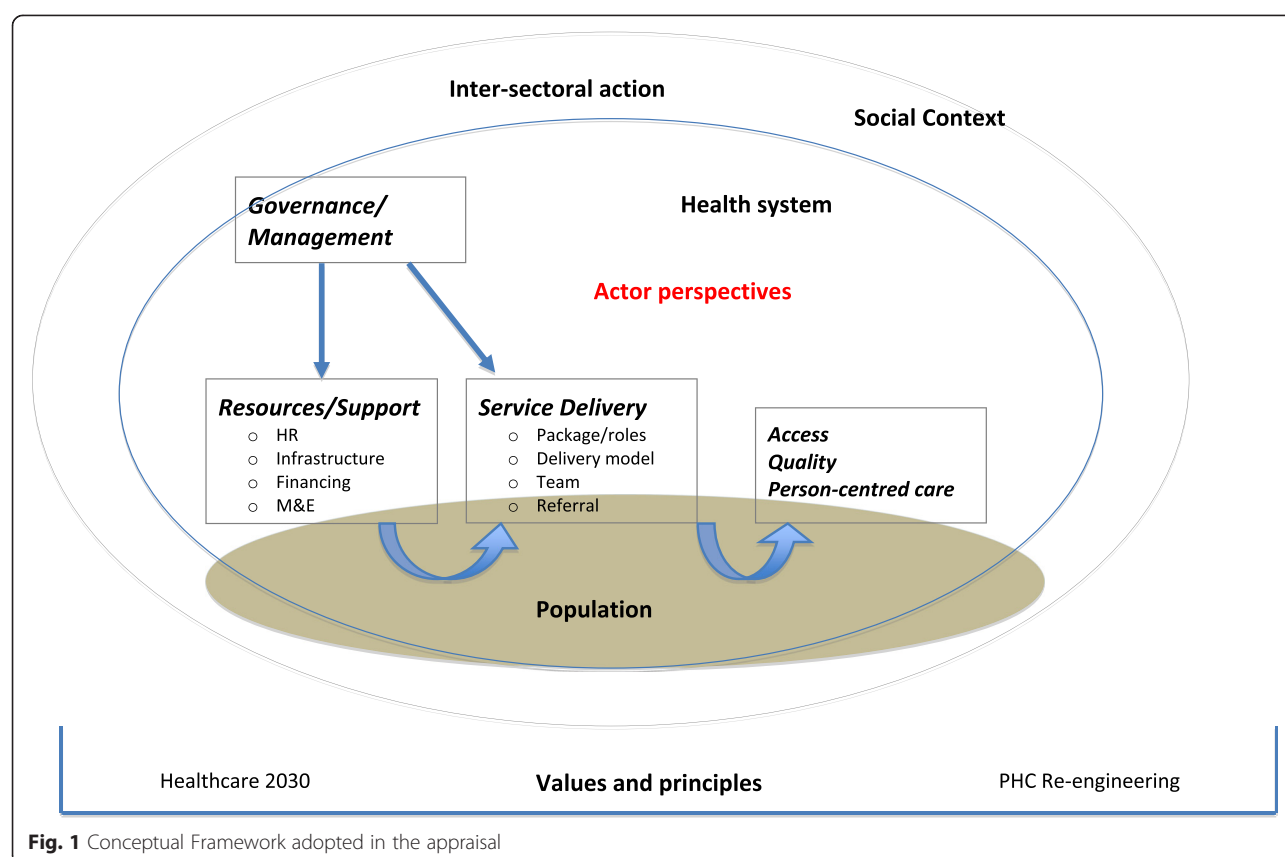
Metro) is the most decentralised level of governance in the Western Cape’s health system, and corresponds in size and function to the classic WHO concept of the District Health System, encompassing community based, primary health care and district hospital services.

Data collection and analysis were guided by a health system framework (adapted from van Olmen et al. [16], assessing outputs (e.g. access, quality), the organisation of service delivery (e.g. roles, supervision), resources and systems (e.g. financing, M&E), and governance/management arrangements (e.g. NGO contracting, accountability relationships) (Fig. 1). The framework also emphasizes values and principles (as espoused by Healthcare 2030, for example), the social and inter-sectoral context in which CBS is embedded, and the health system as interacting with populations.

In addition to mapping these dimensions we sought to understand system strengths and weaknesses through the eyes of the actors in and around CBS, and specifically how they saw its potential and future. The appraisal methods thus included semi-structured interviews or focus group discussions with a cross section of stakeholders from senior to frontline, including health facility managers, providers, patients, community members and stakeholders from other sectors (e.g. social development); analysis of routine data; observations of community care worker (the term for CHWs in the province) practice; and document reviews. Two rural and one urban sub-district/s, were selected for in-depth study by the provincial government as representative of the two realities. The rural sub-districts formed part of a national pilot for national health insurance reforms, and the urban sub-district contained the range of settlements and service responses available within the province.

A total of 97 key informant interviews, 10 focus groups discussions, 23 observations of community care workers (hereafter referred to as CHWs) and 16 patient “care pathway” interviews were completed (Table 2). Key informants and focus group participants were purposively selected, to represent the range of players providing, managing or receiving CBS. Interviews were conducted in the preferred language of the participants, in their work and home settings and in private.

Following the framework, the content of the interviews covered the various dimensions of the community sub-system as (emphasising aspects most relevant to each actor) but also assessed the acceptability of the Healthcare 2030 strategy and readiness for change towards the new approach. Amongst the key informants were the managers of 14 NGOs, 12 of whom provided information on the types/categories of CHWs in their employ ( $n = 409$ ). In addition, the provincial Community Based Services Directorate made available a database with information (age, sex, education, duration in employment,



and training) on 2,893 CHWs across the province. Focus group discussions with community members focused on the knowledge, role and acceptability of community based services. The observations involved a researcher accompanying a CHW, purposefully selected to represent the range of cadres and geographical realities in the province, over a day's work (starting at their homes), and were guided by an observation checklist. Patient interviews examined the care pathways of individual patients from the start of the illness to the present, exploring the role and perceptions of community based services in this pathway. The study proposal was assessed and approved by the University of Stellenbosch's Ethics Committee,

and informed consent and guarantees of confidentiality preceded all interviews.

Interviews and focus group discussions were recorded and transcribed and notes of observations written. Routine data were obtained in excel format and entered into Stata (Version 12) for further analysis. Data analysis was conducted iteratively over a number of weeks, in which responsibility for producing preliminary reports was divided amongst team members, followed by extensive discussion and triangulation of data sources. The health systems framework provided a structure for describing the state of CBS (in a deductive manner), while a significant part of the final report was devoted to an inductive thematic analysis of stakeholder perspectives in which we reported both on current key concerns and visions for the future. Three separate report back workshops were held, for the purposes of both member checking and generation of recommendations. These then formed the basis of a final appraisal report presented to a meeting of senior managers of the provincial health department [17].

## Results

Additional file 1: Table S1 summarises the findings of the appraisal following the categories of the system framework, as well as the challenges associated with and

**Table 2** Summary of data collection activities at a provincial and local levels

Area	Key informant interviews	Focus group discussions		CHW Observations	Patient interviews
		Community	CHW		
Rural sub-districts	50	3	4	16	14
Urban sub-district	24	2	1	7	2
Provincial	23				
Total	97	5	5	23	16

recommendations for shifting the current community based services platform towards the goals of Healthcare 2030 as outlined in Table 1. Key themes are explored further below.

### CBS delivery model

The current CBS delivery model dates back to the emergence of community based responses to HIV/AIDS and the related epidemic of TB in the mid to late 1990's. In 2003, European Union (EU) funding, aimed at promoting the development of community based organisations, enabled the expansion of home based care across the province through a system of NGO contracting. The initial focus was on "dehospitalised" and palliative care for bedridden patients, in an era when anti-retroviral therapy (ART) for HIV was not yet universally accessible. Simultaneously, NGOs in the province were experimenting with community based models of TB care, based on the WHO "DOTS" – directly observed treatment, short course – approach. When the EU programme ended in 2007, a combination of funding from an Expanded Public Works Programme (EPWP) and national ring fenced grants for HIV and TB enabled the continuation and expansion of this service platform. With greater access to ART, the focus of home based care shifted to dehospitalised care of other chronic diseases, adherence support for those on ART and TB treatment, and most recently, school health services. Initially NGO-based services were single purpose (TB, HIV, nutrition, palliative care etc.) with models and approaches to delivery specific to each NGO. Through the contracting process, the province has sought to incrementally shift service delivery to more integrated roles (e.g. combining TB and ARV adherence support), specifying standardised core packages and demarcating geographical zones of NGO activity.

At the time of the appraisal (mid-2013), the Western Cape had a well-established CBS delivery platform provided through contracts with 72 NGO intermediaries, and employing 3,594 CHWs. This represented a ratio of 0.78 CHWs/1,000 public sector dependent population, a fairly extensive infrastructure, but still significantly less (shortfall of 28 %) than the new norms proposed by Healthcare 2030.

The vast majority (97 %) of CHWs were women, typically between 30 and 50 years of age; all had some secondary level schooling (40 % with a school leaving certificate). They worked half days, earning stipends of R1,200-R1,500 (\$US120-50) per month. They were recruited by the NGOs and supervised by nurses in a ratio of roughly 20 CHWs to one nurse supervisor. This is in contrast to the full time, implicitly better remunerated, and better supervised worker proposed in Healthcare 2030. The numbers of CHWs, nurse supervisors and stipend levels were determined by the provincial

government and specified in NGO contracts. While initially managed by a provincial CBS Directorate, NGO selection, contracting, disbursement and financial accounting was being decentralised to district structures at the time of the appraisal.

### Roles of CHWs

The majority of the 409 CHWs inventoried in the two sub-districts (73 %; urban, 66 %; rural, 96 %) were referred to as "*home based carers*", who described their roles principally as providing support for activities of daily living (washing, feeding, changing bedding), basic nursing care (wound dressing, pressure ulcer care, disposal of needles and syringes), limited rehabilitation (walking, sitting), and general emotional support in homes. The patients were referred for home based care to the NGO by local hospitals via district/sub-district channels.

The second most common role was that of "*CDL - chronic disease of lifestyle - worker*" provided by a single purpose cadre in urban areas and by home based carers in the rural sub-district. This role involved running "CDL clubs" (support groups of patients predominantly suffering from hypertension and diabetes), and where nursing professionals were available, the distribution of follow up chronic disease medication. In this instance, referral and support relationships were established with local health facilities.

The third role was that of ARV/TB treatment adherence supporter (also a single purpose cadre in urban areas), which in contrast to the CDL clubs, followed up clients in their homes, doing pill counts, treatment literacy, tracing of contacts and defaulters, and liaising closely with local TB/HIV clinic staff.

Finally, in a recent addition to services, CHWs were deployed to school health teams to assist nurses with health promotion and screening programmes, most especially in the urban district.

While there appeared to be a general convergence of CHW roles towards these core activities, a few government supported NGOs had retained distinct identities and roles, which included, amongst others, outreach and support (nutrition, breastfeeding, integrated management of childhood illness etc.) to pregnant women and young children, and holistic (combining health and welfare) family support to households at risk, identified through house to house visits.

As the time of the appraisal, the profile of roles was far from the comprehensive vision of Healthcare 2030. The majority of CHWs and activities were oriented towards provision of home nursing care of patients referred to NGOs following discharge from hospital, and community based follow up/support for chronic life long conditions. Roles and activities focused on children,



reproductive health and young adults were largely absent. Preventive and promotive roles were limited to periodic community campaigns (organised along “seasons”).

In observations of CHWs their roles, particularly in households, were often vague and lacking in definition, tending to follow a limited number of locally mandated routines, and heavily focused on meeting daily visit quotas. Patient journeys and observations documented large numbers of missed opportunities for intervention (in all age groups) within households. A significant part of the day, especially in rural areas, was consumed with walking to and from the homes of patients.

Many of the district actors questioned the value and quality of services provided by NGOs and CHWs: “We have no idea what they are really doing, we don’t know what the quality is of the work they are doing.” (District Manager) Roles had also evolved in an ad hoc manner. “CBS takes on new programmes each year in an unstructured fashion and without a clear plan.” (Sub-district CBS Manager). Stakeholders from other sectors commented on the absence of collaborative efforts with similar workers in related sectors, such as social development.

In our observations, CHWs were also treated as subordinate cadres. They followed the instructions of professionals and were readily drawn into facilities to undertake menial activities. Interviewees pointed out that CHWs were very familiar with their neighbourhoods and “know exactly who has given birth, who is a drug addict...who has an emotional (problem).” (NGO manager), yet the nurses and other professionals they interacted with seldom asked them to contribute insight or opinion on clients or households. They did not appear to be seen as agents with independent knowledge of community life and capable of judgement and discretionary action.

Stakeholders across the board were in favour of a revised definition of roles for CHWs in line with Health-care 2030 and believed that CBS held considerable potential for addressing disease burdens. Amongst senior managers there was near universal support for a comprehensively trained community health worker, with a stronger preventive and promotive focus, more strongly embedded within the PHC system and working with other sectors. “There is very little being done with health promotion. That is where we are going to save resources and build a healthier nation if we focus on promotion. We need to bring in other partners. Therefore this cadre of staff needs support from other sectors as well in order to do health promotion...” (Provincial Manager) “[We] need to have a generic worker, a ward based system, good supervision, good links to PHC and a good M&E system”. (District Manager)

Stakeholders also reaffirmed the role of CHWs as complementing that of local health facilities and the

need to strengthen links between PHC facilities and communities: “It’s not really about treatment it’s about education, training, screening... facilities are there to treat and [CHWs] are there to promote and prevent...” (Provincial Manager) “They are supposed to strengthen the system from the clinic to the community, and from the community back to the clinic.” (District Manager)

Community members also welcomed the possibility of new roles, provided there was sufficient preparation and participation: “Communities should be part of the safety system and they can play a big role in if they were educated about the new vision and have knowledge about the new system.” (Community FGD discussion). Acceptance of and support for CHWs was universally high, and the simple act of visiting people with illnesses in homes was valued. CHWs were contrasted favourably with health professionals: “Indeed they [CHWs] are a great help, they understand your environment more than the ones [nurses] that are in the clinic because they come to your homes and see your condition, that in itself helps you as a person.” (Community focus group discussion). This trust in CHWs suggests a degree of community embeddedness and the potential role as mediator between communities and the health system.

At the same time, there was uncertainty as to what roles would lead to the most effective outcomes. As one district manager pointed out: “The problem is that it is such a wide concept [community based service delivery], and each person interprets the concept in their own way... [they are] all on different pages. It’s a very broad concept. [I] don’t think management understands it or is fully in agreement on what it should be.” (District Manager)

There was also “a fear that we are going to overburden these people [the CHWs]. They don’t have the hands.” (Provincial Manager), while others pointed to the need for local prioritisation: “The burden of disease in particular areas should dictate this [the role], some areas have different health issues.” (Provincial Manager)

One NGO was concerned that the new focus on prevention and promotion would be at the cost of providing home-based care for those that are already ill: “This could make a great impact - but only if they don’t lose focus on those who are actually ill, and not just (focus) on prevention and promotion activities. It should be prevention, promotion and care.” (NGO manager)

#### Human resource dimensions

A quarter (26 %) of CHWs had been working for five years or more, while 48 % had been working for less than two years, representing a high turnover around a stable core. In the NGO inventories conducted in the urban sub-district, 31 % of CHWs had left their organisation in the year prior to the appraisal. The low stipend

and precarious nature of employment were seen as the main reasons for this: *"Where there are no benefits, no job security or a fulltime job, there will be a high turnover of carers."* (Sub-District Manager)

A key consequence of the high turnover was that just over half (51 %) the CHWs were at "entry level", namely, had not had an opportunity to be trained through the nationally accredited and ladderised (from 1 to 4 years) training system developed for community carers. Funded by the national Expanded Public Works Programme and provided through contracted private providers, vigorous attempts were being made by provincial managers to ensure that all CHWs had access to some training. However, training providers and processes were disconnected from NGOs, who resisted sending much needed personnel away for periods of time to be trained. Interviewees across the board saw this training system as poorly aligned to current (let alone future) needs, as expensive, unrealistic (stretching over 4 years) and as failing to secure any meaningful career pathways. Apart from additional training provided by the provincial government for TB/HIV adherence workers, systems of in-service and induction training were the responsibility of the individual NGOs. Skills and therefore quality of services were highly uneven across the platform.

#### Financing and M&E systems

Provincial funding streams for CBS have been stabilised through a combination of EPWP and national HIV/AIDS conditional grants. However, these funding sources are outside of the core provincial budget, referred to as the "equitable share", which funds the primary health care and district health system. Although the management of CBS was being increasingly decentralised, its location as a contracted service funded through special mechanisms reinforced its status as an optional add-on that would survive as long as these mechanisms were available.

Despite the low levels of remuneration and very limited resources for transport, communication and uniforms, and the small proportion of total provincial health expenditure devoted to CBS (estimated to be less than 2 %), senior managers expressed uncertainty about the large amounts of money "signed off" in NGO contracts on an annual basis. *"If you ask me for the millions we spend on this programme, what exactly is the outcome of that, I can't tell you, I have no idea."* (District Manager) While financial management and NGO governance systems were adequately monitored, NGOs were not being held accountable for their performance. *"...there are NGOs who are performing and those who are not performing. (The Department) cannot just continue to fund for the sake of funding. NGOs need to display that they do actually have disciplinary procedures*

*that they use in order to ensure the quality of their work."* (NGO Manager)

This concern also related to the perceived absence of monitoring and evaluation systems. *"There is no M & E framework...adequate attention is not paid to the impact and what is being provided there."* (Provincial Manager) At the time of the appraisal NGOs were in reality returning routine monthly activity reports through an elaborate CBS information system that involved 46 data elements and extensive form filling. This system produced information that was regarded as being of poor quality and which no one trusted. There is difficulty in capturing, in a set of routine indicators, a diffuse and shifting service delivery platform, and CBS has fallen largely outside of quarterly and annual systems of review and reporting, entrenching its marginal status.

Thus while CBS was being seen as holding great potential, there was reluctance to consider allocation of additional resources: *"There are many expectations from CBS but no resources committed to it."* (Sub-district Manager)

#### Governance

A key theme raised during the appraisal was the most appropriate organizational location of community based services and CHWs – as integrated into the public sector workforce or as remaining within the NGO sector. While national proposals were initially for integration into the civil service, where salaries and conditions of service would have been greatly improved, the absence of new budget lines has made this difficult to implement in the short term. Affordability is however, just one of the considerations, and it is possible to envisage an NGO model where CHWs are adequately remunerated. Table 3 summarises the advantages and disadvantages of the NGO and DOH (integrated) models of service delivery raised during the appraisal.

While many reflected on both the pros and cons of the current system, views on the desirability of NGO-contracted model varied considerably. Senior provincial and district managers were firmly of the view that the NGO model should continue. Positions varied from the principled: *"The NGO model has a lot to offer, let's figure out how to do it better"*, to the pragmatic *"We'd like to bring them into the system but we'll never afford it"*. At lower levels, amongst PHC providers and front line managers involved in delivering and managing services there was, however, much stronger criticism of the NGO model. There were effective systems of financial management, but the day-to-day performance of CHWs and NGOs was seen as difficult to manage and control. NGOs had their own (diverse) imperatives and did not necessarily share the vision of the health department; the system was unstable with poor retention and high

**Table 3** Advantages and disadvantages of DOH and NGO models of provision

DOH provision		NGO provision	
Advantages	Disadvantages	Advantages	Disadvantages
• financial security	• CHWs easily become facility based	• aligns with NHI contracting models	• variable supervision and capacity
• personal job security	• curative oriented	• more responsive, innovative and efficient	• power dynamic between DOH and NGO unequal
• career paths & promotion	• barriers to entry, some excluded	• community ownership & identity	• CBS may not be their primary activity
• standardisation of roles	• massively increase the costs	• inter-sectoral action more feasible	• funding streams vulnerable in the current financial climate.
• easier to control	• CHWs would lose their community identity	• primary prevention focus	
• better access to resources and supplies		• advocacy for particular issues	
• continuity of care & integration		• history, credibility, & networks	
• better alignment with the DoH outcomes			
• lower transaction costs in managing contracts			
• in-service training is easier			

turnover of CHWs due to low stipend payments; there was little direct supervision of CHWs by NGO nurse coordinators; and referral systems into the platform were complex.

A related theme was the lack of clear lines of coordination, communication, referral and accountability between CHWs, NGOs and local primary health care facilities, stemming in part from the “dehospitalisation” focus of the platform. Many expressed the view that “... *there needs to be closer link between the facility based and community based services so that the facility based services take (the CHWs) seriously enough.*” (CBS manager) While there had been decentralisation of NGO contracting, this went as far as the district level and tended to be associated with HIV/AIDS programmes. Those responsible for the day-to-day management of primary health care and district services, at a sub-district level, had little involvement in the decision making or planning for CBS.

## Discussion

The findings highlight a complex and inter-related set of design, resourcing, relational and governance challenges for provincial managers and policy makers seeking to re-orient community based services towards new goals as proposed in Healthcare 2030. In sum, measures are required to ensure greater retention and stability of the existing core cadres while expanding numbers, redefining and extending roles, investing in training, designing new, aligned and integrated management systems, reshaping relationships in the primary health care system between CHWs, NGOs, communities and other sectors,

and creating capacity for governance of community based services at local levels. These are discussed further below.

In many respects these challenges are not new and were well described in the first wave of large-scale CHW programmes following the Declaration of Alma Ata in 1978 [18, 19]. However, these old challenges are confronting a new and different context, particularly in the southern African region. The first aspect of this is the highly diverse, organic and dense character of the current community care infrastructure that evolved in response to HIV/AIDS. While this mobilisation offers significant opportunities, it may also not be readily amenable to reshaping as a regulated form of health sector outreach, especially if this is not accompanied by access to significant new resources [20]. The second aspect of this context is the limited scope of existing interventions and the need to negotiate and develop a more comprehensive repertoire of roles and responses, capable of adapting to a complex and changing set of needs.

## Design

In the Western Cape, the first challenge consists in defining the place of CHWs and outreach teams in line with the priorities and approach of Healthcare 2030. Unfortunately, much of the international evidence on CHW roles, especially in Africa, relates to the achievement of the Millennium Development Goals, and most specifically to the maternal and child health aspects of these [8, 9]. The settings of this evidence base are different to the Western Cape where infant and child mortality are relatively low (21 and 25/1000 live births

in 2010, respectively), and where chronic conditions (HIV/TB and other non communicable diseases) and violence and injury (underpinned by substance abuse and mental illness) dominate as causes of ill-health and mortality [21].

Beyond defining roles, the location of CBS between the health system, households and community, and of CHWs as having a double identity as representing both [22], also poses more fundamental questions on how best to frame this aspect of health systems. Should community based services and CHW programmes be conceptualised as engaging and mobilizing communities to address the social determinants of health, or as a form of health system outreach with specific technical roles? This distinction, famously characterised as “lackey or liberator” by David Werner in the 1980s [23], while a simplistic representation of fluid and hybrid everyday realities, points to the importance of clarifying underlying assumptions and establishing the basic identity of CHW programmes.

Shifting from a limited purpose care and referral service, oriented to needs of hospitals to a pro-active and comprehensive engagement with households and communities requires a fairly radical reshaping of roles and relationships within the PHC system as a whole. At formal level, the CBS teams proposed in Healthcare 2030 will become much more closely linked to PHC facilities in referral and reporting relationships, in contrast to the diffuse (hospitals, PHC, HIV/TB programme) relationships that characterised community based services in the past. On the other side, a more active and systematic approach towards households can only succeed if there is a degree of community acceptability and buy-in. Agreement will thus need to be reached on referral pathways, facility-NGO-CHW relationships, mechanisms for inter-sectoral coordination and processes of community engagement and participation. This in turn will require a number of mind-set shifts. The appraisal found that many in the PHC system were supportive of closer links with CBS, but often did not appreciate its particular contribution to the health system and regarded it as a subordinate rather than independent sphere. As highlighted elsewhere [19], where the PHC system is not adequately inducted, professionals will naturally seek to draw community based cadres into health facilities as an “extra pair of hands”.

### Resourcing

Successful CHW programs are able to “cultivate support and to withstand competition in the broader political and economic environment” [11]. In many contexts, such support has occurred against a backdrop of a widely perceived human resource crisis [3]. In the Western Cape, the problem presents itself less as one of crisis than the

need to elevate the status and improve the performance of an existing platform. While in the minds of many players the extent of health burdens and the need for better prevention and promotion justified reforms to CBS, the appraisal also encountered considerable scepticism of its capacity to deliver even its current mandate. Meeting the norms of Healthcare 2030 requires an expansion in numbers of CHWs and supervisors, a shift to full time employment and improved remuneration levels. In addition to better conditions of service for its core cadres, systems of financing, monitoring and evaluation and training, integrated into the routine functioning of PHC and district health systems, will be needed. In the face of multiple competing demands, a major challenge confronting CBS will be to garner evidence and sustained high-level political support to translate policy intent into concrete resource allocation.

### Governance

One of the key governance dilemmas in the Western Cape is whether to retain the NGO contracting system or not, especially since significant capacity for contract management has been established in the province. The DOH model (and the likely improvement in conditions of service) was seen by many as a way to stabilise community based services and achieve greater standardisation of approaches. The danger with this model is that the CHWs will be treated as workers on the lowest rung of the civil service, losing their community identity and increasingly drawn into facility based functions. As a number of case studies documented during the appraisal found, the NGO model has greater capacity for innovation and responsiveness, even if the transaction costs of managing contracts are high. As Pallas et al. [11] point out, “CHW approaches are successful if they are at once strongly connected to the community and also have a clearly defined role and relationship with the formal health system”. The added value of relative autonomy and community embeddedness may favour an NGO model, especially where there is some pre-existing capacity.

An NGO partnership system, however, requires capacity for managing contractual relationships that includes not only financial accounting and performance monitoring but also the trust relationships necessary for effective cooperation in a plural environment. The more decentralized these processes the more the possibility of establishing so-called “relational” contracting systems [24], between government and NGOs. The appraisal concluded that in the Western Cape, the NGO model did provide a basis for CBS, if relationships with PHC services were improved, and the sub-district played a more central role in the management of partnerships.

A strengthened community based system also entails coordinating actors who do not exist in formal hierarchical



or contractual relationships with health services, such as providers from other sectors and community structures. Being able to build norms of responsiveness and answerability between these local players, despite the absence of formal lines of accountability is a key element of local governance of CBS. It requires the capacity to shift from modes of command-and-control (managing up and down) that are the dominant cultures within frontline service provision towards new relationships across organisational boundaries based on networking, cooperation and reciprocity (managing out). As with PHC players, this requires a mind-set shift at sub-district level, where the default approach will be to treat all relationships as hierarchical, or to avoid interactions that cannot be managed through command-and-control.

## Conclusions

The renewed focus on community based services as part of national health systems in South Africa, and the southern African region more generally, is due in part to the massive opportunities offered by the mobilisations around HIV/AIDS over the last two decades. Many of the difficulties of formalising and strengthening community based services, located at the interface between households and the formal health system, are well known. However, this paper seeks to place these challenges in a rapidly evolving contemporary context, not only with respect to changing health needs, but also in the range and complexity of actors involved, and the need for new relationships of coordination and accountability in plural health systems.

Drawing on an adapted version of the WHO building blocks model (“hardware”), and combining this with an actor centred and relational (“software”) analysis, the paper also provides an approach for holistically evaluating this sub-system. Ultimately, the central and most complex challenges in strengthening CBS lie less in technical systems design, than in making the case for investment through advocacy and evidence, and forging new relationships and a new CBS identity on the back of an established system. This requires considerable “managerial flexibility and strategic flair” and an ability to engage multiple actors, interest groups and organisations in a sustained fashion over time [25].

## Additional file

**Additional file 1: Table S1.** Overview of appraisal findings. (DOCX 98 kb)

## Abbreviations

CBS: Community based services; CHW: Community health worker; DOH: Department of Health; PHC: Primary health care.

## Competing interests

The authors declare that they have no competing interests.

## Authors' contributions

HS was the overall lead of the project and drafted the manuscript. NS coordinated the project activities, and with LD and CG played key roles in the design, conduct and analysis of data for the situation appraisal. TQ was the main counterpart for the project in the Western Cape Department of Health and participated actively in all stages of the project – from commissioning to dissemination. All authors reviewed, commented upon and approved the final manuscript.

## Authors' information

Not applicable

## Acknowledgements

This appraisal which forms the basis of this paper was commissioned by the Western Cape Department of Health. We are grateful to them for permission to publish the manuscript. A great many people were involved in the appraisal at various stages of its planning and execution. We would like to thank in particular Steve Reid, Lisa-Marie Smith, Marina Clarke, Joey Cupido, Keith Cloete, Renette Crous, Nicola Wilson, Marinda Roelofse and Karen Hermanus. Finally, the paper benefitted from the extensive comments made by the reviewers in the first round.

## Author details

<sup>1</sup>School of Public Health, University of the Western Cape; MRC/UWC Health Services to Systems Research Unit, Robert Sobukwe Road, Bellville, Cape Town 7535, South Africa. <sup>2</sup>School of Public Health, University of the Western Cape, Robert Sobukwe Road, Bellville, Cape Town 7535, South Africa. <sup>3</sup>Division of Community Health, Faculty of Medicine and Health Sciences, Stellenbosch University, Francie van Zijl Drive, Tygerberg 7505, South Africa. <sup>4</sup>Division of Community Health, Faculty of Medicine and Health Sciences, Stellenbosch University & Department of Health, Western Cape Government, 4 Dorp Street, Cape Town 8000, South Africa. <sup>5</sup>Community Based Services, Department of Health, Western Cape Government, 4 Dorp Street, Cape Town 8000, South Africa.

Received: 22 May 2015 Accepted: 23 September 2015

Published online: 30 September 2015

## References

- Schneider H, Lehmann U. Lay health workers and HIV programmes: implications for health systems. *AIDS Care*. 2010;22 Suppl 1:60–7.
- Birdsall K, Kelly K. *Pioneers, Partners, Providers: The Dynamics of Civil Society and AIDS Funding in Southern Africa*. CADRE/OSISA: Johannesburg; 2007.
- Zulu J, Kinsman J, Michelo C, Hurtig A-K. Integrating national community-based health worker programmes into health systems: a systematic review identifying lessons learned from low-and middle-income countries. *BMC Public Health*. 2014;14(1):987.
- Third Global Forum on HRH. Output Document: Side Session on Community Health Workers and Other Front Line Health Workers. Moving from Fragmentation to Synergy to Achieve Universal Health Coverage. Recife: Global Forum on HRH; 2013.
- National Department of Health. CHW Audit Report: Draft 1. Pretoria: NDOH; 2011.
- National Department of Health. Re-Engineering Primary Health Care in South Africa: Discussion Document. Pretoria: NDOH; 2010.
- Western Cape Department of Health. *Healthcare 2030: The Road to Wellness*. Cape Town: Western Cape Provincial Government; 2013.
- Lewin S, Munabi-Babigumira S, Glenton C, Daniels K, Bosch-Capblanch X, vanwyk BE, et al. Lay health workers in primary and community health care for maternal and child health and the management of infectious diseases. *Cochrane Database Syst Rev*. 2010;3(3):CD004015.
- Perry H, Zulliger R. How Effective Are Community Health Workers? An Overview of Current Evidence with Recommendations for Strengthening Community Health Worker Programs to Accelerate Progress in Achieving the Health-Related Millennium Development Goals. Baltimore: Johns Hopkins School of Public Health; 2012.
- Bhutta Z, Lassi Z, Pariyo GW, Huicho L. *Global Experience of Community Health Workers for Delivery of Health Related Millennium Development Goals: A Systematic Review, Country Case Studies, and Recommendations for Integration into National Health Systems*. Geneva: Global Health Workforce Alliance; 2010.

11. Pallas SW, Minhas D, Pérez-Escamilla R, Taylor L, Curry L, Bradley EH. Community health workers in low- and middle-income countries: what do we know about scaling up and sustainability? *Am J Public Health*. 2013;103(7):e74–82.
12. McCord GC, Liu A, Singh P. Deployment of community health workers across rural sub-Saharan Africa: financial considerations and operational assumptions. *Bull World Health Organ*. 2013;91(4):244–53.
13. World Health Organization. Everybody's Business: Strengthening Health Systems to Improve Health Outcomes: WHO's Framework for Action. Geneva: World Health Organization; 2007.
14. Perry H, Crigler L, editors. Developing and Strengthening Community Health Worker Programs at Scale: A Reference Guide and Case Studies for Program Managers and Policy Makers. Baltimore: USAID/Maternal and Child Health Integrated Program/Jhpiego Corporation; 2014.
15. Sheikh K, Gilson L, Agyepong IA, Hanson K, Ssengooba F, Bennett S. Building the Field of Health Policy and Systems Research: Framing the Questions. *PLoS Med*. 2011;8(8):e1001073. doi:10.1371/journal.pmed.1001073.
16. Van Olmen J, Criel B, van Damme W, Marchal B, van Belle S, van Dormael M, et al. Analysing Health System Dynamics. A Framework. Antwerp: ITG Press; 2012.
17. University of the Western Cape, University of Cape Town, University of Stellenbosch. HCBC Review: Final Report. Cape Town: University of the Western Cape; 2013.
18. Walt G, Perera M, Heggenhougen K. Are large-scale volunteer community health worker programmes feasible? The case of Sri Lanka. *Soc Sci Med*. 1989;29:599–608.
19. Gilson L, Walt G, Heggenhougen K, Owuor-Omondi L, Perera M, Ross D, et al. National community health worker programs: how can they be strengthened? *J Public Health Policy*. 1989;10:518–32.
20. Van Pletzen E, Zulliger R, Moshabela M, Schneider H. The size, characteristics and partnership networks of the health-related non-profit sector in three regions of South Africa: implications of changing primary health care policy for community-based care. *Health Policy Plan*. 2014;29(6):742–52.
21. Groenewald P, Berteler M, Bradshaw D, Coetzee D, Cornelius K, Daniels J, et al. Western Cape Mortality Profile 2010. South African Medical Research Council: Cape Town; 2013.
22. Mlothesa L, Harris B, Schneider H, Moshabela M. Exploring the perceptions and experiences of Community Health Workers using Role Identity Theory. *Global Health Action*. 2015;8:28045.
23. Werner D. The Village Health Worker : Lackey or Liberator? *World Health Forum*. 1981;2(1):46–68.
24. Palmer N, Mills A. Classical versus relational approaches to understanding controls on a contract with independent GPs in South Africa. *Health Econ*. 2003;12(12):1005–29.
25. Gilson L, Schneider H. Commentary: Managing scaling up: what are the key issues? *Health Policy Plan*. 2010;25(2):97–8.

**Submit your next manuscript to BioMed Central and take full advantage of:**

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at  
[www.biomedcentral.com/submit](http://www.biomedcentral.com/submit)



### **Paper 3**

Schneider H, English R, Tabana H, Padayachee T, Orgill M. Whole-system change: case study of factors facilitating early implementation of a primary health care reform in a South African province. *BMC Health Services Research*. 2014; 14 (1):609.

#### **Paper overview**

This paper is the second provincial case study contributing to the thesis. It was conducted in the North West Province in 2012/13, an early adopter and enthusiastic proponent of the WBOT strategy. This paper complements the Western Cape case study, addressing design and policy development themes, with a focus on the implementation phase of policy. Drawing on approaches to programme evaluation, and the “simple rules” of whole system change, it describes the implementation strategies that enabled the widespread adoption and implementation of the WBOT strategy at provincial level. As outlined in the introduction, this successful early phase has been sustained and at the end of 2015 the province had the highest coverage by teams in the country.

#### **Contribution to the thesis and novelty**

The contribution of the paper to the thesis is specifically to the third objective: To evaluate provincial contexts and strategies enabling successful adoption and implementation of the WBOT strategy. As with the Western Cape case study, the paper also contributes to objectives 4 and 5 by adding insights on the governance and leadership of change in CHW programmes at scale. The paper’s novelty lies in the application of the concept of whole system change to the community-based sector, and the description of a positive example of implementation.

#### **Contribution of candidate**

The North West Province case study was conducted following a request from the provincial government and as a collaboration of different institutions (Universities of the Western Cape and Cape Town and Health Systems Trust). HST contributed the provincial head office interview data for the project, while the other two institutions, with the candidate as PI, collected the remaining data. The project report and paper were both drafted by the candidate with the co-authors commenting critically on drafts of the manuscript.

RESEARCH ARTICLE

Open Access

# Whole-system change: case study of factors facilitating early implementation of a primary health care reform in a South African province

Helen Schneider<sup>1\*</sup>, Rene English<sup>2</sup>, Hanani Tabana<sup>1</sup>, Thesandree Padayachee<sup>3</sup> and Marsha Orgill<sup>4</sup>

## Abstract

**Background:** Whole-system interventions are those that entail system wide changes in goals, service delivery arrangements and relationships between actors, requiring approaches to implementation that go beyond projects or programmes.

**Methods:** Drawing on concepts from complexity theory, this paper describes the catalysts to implementation of a whole-system intervention in the North West Province of South Africa. This province was an early adopter of a national primary health care (PHC) strategy that included the establishment of PHC outreach teams based on generalist community health workers. We interviewed a cross section of provincial actors, from senior to frontline, observed processes and reviewed secondary data, to construct a descriptive-explanatory case study of early implementation of the PHC outreach team strategy and the factors facilitating this in the province.

**Results:** Implementation of the PHC outreach team strategy was characterised by the following features: 1) A favourable provincial context of a well established district and sub-district health system and long standing values in support of PHC; 2) The forging of a collective vision for the new strategy that built on prior history and values and that led to distributed leadership and ownership of the new policy; 3) An implementation strategy that ensured alignment of systems (information, human resources) and appropriate sequencing of activities (planning, training, piloting, household campaigns); 4) The privileging of 'community dialogues' and local manager participation in the early phases; 5) The establishment of special implementation structures: a PHC Task Team (chaired by a senior provincial manager) to enable feedback and ensure accountability, and an NGO partnership that provided flexible support for implementation.

**Conclusions:** These features resonate with the deliberative, multi-level and context sensitive approaches described as the "simple rules" of successful PHC system change in other settings. Although implementation was not without tensions and weaknesses, particularly at the front-line of the PHC system, the case study highlights how a collective vision can facilitate commitment to and engagement with new policy in complex organisational environments. Successful adoption does not, however, guarantee sustained implementation at scale, and we consider the challenges to further implementation.

**Keywords:** Whole-system change, Early implementation, Primary health care, Community health workers, South Africa

\* Correspondence: [hschneider@uwc.ac.za](mailto:hschneider@uwc.ac.za)

<sup>1</sup>School of Public Health, University of the Western Cape, Robert Sobukwe Road, Bellville, Cape Town 7535, South Africa

Full list of author information is available at the end of the article

## Background

There is a global pendulum swing back towards support for community health workers (CHWs) in national health systems. The last few years have seen a growing literature on the potential roles and efficacy of CHWs in supporting progress towards the Millennium Development Goals [1] and calls for the “scaling up” of CHW programmes [2]. At the Third Global Forum on Human Resources for Health in Brazil in November 2013, key international players committed themselves to a framework for the strengthening and integration of CHW programmes within national health systems [3].

In 2010, South Africa introduced a policy of “primary health care (PHC) outreach teams” as part of a broader set of measures to revitalize the primary health care system [4]. The PHC outreach team strategy envisages that a team of generalist community health workers (CHWs), led and supported by a professional nurse, will be responsible for a defined number of households and will form close links with the local health facility. These teams will be comprehensive in orientation, addressing HIV/TB, maternal-child health and chronic non-communicable diseases, with a strong preventive/promotive focus that includes inter-sectoral action on the social determinants of health.

The PHC outreach team strategy in South Africa is less of a scale up than a re-organisation and integration of a loose and highly diverse community based “economy of care” [5] that has emerged in South Africa over the last 15 years around the response to HIV and TB [6]. With financial support from government and donors, an array of NGO-based, often single purpose, lay health workers were recruited to provide care, support and counseling in health facilities, homes and communities. In 2011, a government audit counted more than 72,000 such workers across the country, employed through 2,963 non-profit organizations (NPOs), many in a semi-formal relationship with the health system [7].

The development and implementation of PHC outreach teams, and CHW programmes more generally, can be regarded as policy with “system wide effects” [8], or what has also been variously referred to by Greenhalgh and colleagues as “whole-system change” [9], “whole-scale transformation” [10], or “large-system transformation” [11]. While not implying change in every single component of the health system, whole-system interventions are more than the implementation of a project or programme. They are “aimed at coordinated, systemwide change affecting multiple organizations and care providers, with the goal of significant improvements in the efficiency of health care delivery, the quality of patient care, and population-level patient outcomes” [11:422].

The PHC outreach team strategy entails new goals, forms of engagement with households, service delivery roles and relationships between players in the PHC system. Achieving

such changes requires not only political support and the buy-in of a considerable number of actors, but also the mobilisation of new resources, development of new human resource and information systems, and significant changes in the orientations and everyday practices of frontline providers. It thus has planning, design, communication and political management elements that encompass both the “hardware” and “software” of health systems [12]. Together, these hardware and software elements form part of what the World Health Organization (WHO) refers to as the governance and leadership (or stewardship) roles of health systems [13]. In the past, numerous initiatives to scale up successful small-scale CHW models foundered because they failed to appreciate the governance and leadership tasks of both scaling up and sustaining such programmes at scale [14-16].

Because system wide interventions involve many players and sub-systems in complex webs of interaction (both formal and informal), the pathways and impacts of these interventions are inherently unpredictable. Complexity theory suggests, however, that most complex systems have a few key rules underpinning them [17]. In their review of Canadian experiences with primary health care reforms, Best et al. [11] identified five “simple rules” of successful large-system transformation.

They were:

1. A mix of designated (formal) leadership with distributed leadership in the change process
2. The presence of feedback loops
3. Paying attention to past system history
4. Engaging front line/powerful providers
5. Engaging end-users (families and communities)

The “simple rules” emphasize the need for collective or distributed leadership in the change process, and are therefore not only driven by top managers of organisations. Actors at the coal-face of systems, often the actual implementers of policy, may have very different interests and perspectives than their managers. Referred to as “street level bureaucrats” [18], they are faced with the immediate consequences – sometimes unanticipated – of new initiatives, and have to reconcile the demands from the top with the reality of resource constraints in the service delivery environment. They are able to exercise discretionary power in either accommodating or resisting policy initiatives and in shaping them in ways that fit with their every day realities. A political perspective on implementation, therefore, would see it as inherently contested and a negotiated combination of top down implementation with bottom up reactions and accommodations [19]. As implied by Best et al. [11] processes that explicitly seek to engage the frontline create the spaces for this negotiation.



In South Africa, the PHC outreach team strategy is a national policy whose implementation is managed in the nine provinces of the country. This paper is a case study of initial implementation in one of the early adopters of the new policy, North West Province. National stakeholders introduced the strategy in the Province in May 2011 at a workshop of more than 100 managers, spanning province to sub-district. The national Department of Health defined the roles and composition of the PHC Outreach Teams, developed training materials, provided a first round of training for the teams, and designed a new monitoring and evaluation system integrated into the district health information system. It stopped short, however, of providing financial resources for implementation of the new strategy. In this sense it could be regarded as a loose or unfunded mandate, and has resulted in highly variable uptake at provincial level.

The North West Province is one of the smaller and more rural South African provinces. It has a population of 3.6 million, an infrastructure of 22 hospitals and 300 clinics/community health centres and a well established district health system consisting of four health districts and nineteen sub-districts. Within weeks of the national visits, senior managers had set up a Provincial PHC Re-engineering Task Team to steer implementation. A provincial PHC Re-engineering Strategy and a three-year Project Implementation Plan followed soon afterwards, with all four districts subsequently integrating the strategy into their District Health Plans. Training of CHWs and Team Leaders began in late 2011 and 24 pilot teams were established, drawing on the existing pool of community based cadres and spanning all sub-districts. By mid-2012, more than 40,000 households had undergone an initial registration and screening visit and by the end of the year more than 90,000 follow up visits of households deemed vulnerable had been conducted. By mid-2013, 148 teams were in operation and by November 2013 more than 300,000 household visits had been recorded for the year. In 2012 and 2013, the reported household visits per capita were far higher in the North West than in any other province<sup>a</sup>. An audit in March 2014, counted 227 functioning teams, supported by 206 team leaders [20]. While it is too early to assess impacts of the intervention on coverage and public health indicators (such as early antenatal booking, immunization coverage and retention in care for chronic diseases), it is clear that the national policy gained ready anchor in this province and was able to mobilize change in a fairly short space of time.

In this paper we present the contextual factors and implementation strategies that enabled the uptake of the PHC outreach team strategy in the North West Province, and the lessons this offers for thinking about initiating change in primary health care systems and management of CHW programmes at scale.

## Methods

We report on an evaluation of the early implementation of the PHC outreach teams in the North West Province in the form of a qualitative, descriptive-explanatory case study [21]. As pointed out by Chen [22], early implementation represents a particular moment in the life of interventions, and assessments should therefore focus on aspects of change which are most relevant to this phase.

In this case study, we sought to establish a descriptive account of early implementation focusing on:

- Knowledge and ownership of the strategy amongst policy makers and managers
- The implementation strategy or “programme theory”<sup>b</sup> adopted by the province and the chronology of actions which followed
- The mobilization of resources and system inputs (human resource, information, finance) for implementation
- Changes in the roles and relationships at the front-line of service provision (outreach teams, local facilities and their supervisors).

From this descriptive account and drawing on the notions of “simple rules” of change in complex systems, we then sought to identify, in the particular situational and historical context of the North West Province, catalysts for system wide change.

The project formed one of several case studies of early provincial implementation of PHC outreach team implementation, designed as rapid assessments providing a critical mirror on the unfolding policy process.

Data collection consisted of in-depth face-to-face and telephonic interviews and focus groups discussions with a wide range of actors across all levels of the health system. Respondents included those tasked with implementation (Task Team members and district “focal points”), senior line and support service managers (finance, human resource, other support services), middle managers and outreach team members. Interviews were conducted in all four districts. A total of 27 individual interviews and 9 focus group discussions were conducted (Table 1). The data collection processes/tools included open-ended narrative interviews, semi-structured interviews and structured checklist items. These were complemented by observations of meetings and a variety of documentary sources: conference and workshop presentations, speeches to parliament and project reports.

The structured interviews and checklists were guided by the World Health Organization’s health system building blocks framework [13], outlining core functions such as governance & leadership, financing, information, supplies and human resources for health. These “hardware” elements of the health system were complemented by a

**Table 1 Study participants**

Level	Participant	Individual interviews	Focus group discussions
Senior management	Provincial PHC Task Team		1
	Provincial HR manager	2	
	District directors	2	-
Middle Management	Sub-district manager	1	-
	Sub-district PHC re-engineering focal person	3	-
Lower management	Facility managers	4	1
	Local area managers	6	-
Frontline providers	Outreach team leaders	9	1
	CHWs	-	6

focus on the more hidden “software” of implementation, such as actor knowledge and ownership of the policy, and changing roles and relationships.

Permission to conduct the study was granted by the North West Provincial PHC Re-engineering Task Team and the Provincial Health Research Committee, which actively assisted with setting up interviews with relevant players in each district/sub-district. Entry was certainly facilitated by the fact that two of our organizations (Health Systems Trust and University of the Western Cape) were in a partnership with the Province supporting PHC outreach team implementation at the time of the evaluation. However, the evaluation team was independent of the implementation team, and through processes of triangulation and reflexivity sought to minimise potential insider bias (whether positively or negatively inclined to the province).

All interviews were audio recorded, transcribed and coded. Interviews were divided up amongst the co-authors for analysis and then shared with others. Content analysis was conducted in an iterative process involving all the authors (in a series of meetings and workshops), first at a manifest level, to obtain a basic description of events and their sequencing and categorisation of data into main themes; and then at a deeper interpretive level to identify the key elements of the implementation ‘story’ in this province and what this might offer as lessons for elsewhere. A case study report was circulated and commented upon by provincial stakeholders and project partners, a key element of ensuring validity through member checking [21].

The University of Cape Town’s Ethics Committee granted clearance for the study. Written informed consent, including for recording of interviews, was obtained from each person prior to participation, and individual anonymity and the right to withdraw from the interview also guaranteed.

In the findings section which follows, we provide a descriptive account of early PHC outreach team

implementation. In the discussion section we draw out explanatory themes.

## Results

### Knowledge and ownership by policy makers and managers

As already alluded to, commitment to the PHC Re-engineering policy (which also included a focus on school health services and specialist maternal-child health support) was evident at political and senior management levels. The provincial Minister of Health (referred to as the Member of the Executive Council or MEC) made central reference to PHC Re-engineering in his annual budget speeches<sup>c</sup> and as indicated, senior executives moved rapidly to set up planning processes and structures to support implementation. Apart from the establishment of the PHC Re-engineering Task Team, one of the other first steps was to enter into a (donor funded) partnership with a national non-governmental organization (Health Systems Trust), which not only secured technical support for planning, but also skilled facilitators able to work with a range of internal and external actors. This partnership played a major role in supporting the implementation process: collecting and providing relevant information, designing the implementation strategy and engaging with front line providers.

There was also a high level of knowledge and ownership of the new policy by district and sub-district managers. In the North West Province, district managers are graded at a senior (Chief Director) level, and sub-district managers at Director level, above many managers in the provincial structures (a fact commented upon by provincial interviewees). They thus have status and decision making power. One of the four District Chief Directors chaired the PHC Re-engineering Task Team and, with the other district managers, became the key drivers of implementation. These managers understood their role as crucial:

*“At national I would say they would provide the policy but implementation is at district. The district shoots the force behind the implementation. If the districts are not participating in terms of the Chief Director and the Director myself it will be just a beautiful plan from national without being implemented.”* (Sub-district Manager)

They were able to achieve this on the back of long-standing and well-established district and sub-district management structures and systems of accountability. As one district manager explained:

*“Each district had structures that you would regard as sub-districts, which also had a manager and management team. We ... looked into the issues of further management*

*and local accountability and that's when we appointed cadres known as health area managers where each sub-district was divided into smaller areas ... for effective management and such areas were then managed by health area managers, while each facility had its own facility manager. That structure has been there before we adopted the PHC re-engineering."* (District Director)

Planning and systems of reporting on the new policy thus became integrated into existing processes at district and sub-district level. The ready acceptance of the policy by district and sub-district managers was significantly influenced by the fact that they saw the policy, from the start, as both reflecting and reaffirming what was already present in the Province:

*"The elements of PHC re-engineering have long been implemented in the North West... The official adoption by the national department of the PHC re-engineering as a model upon which to push our service delivery perhaps has added ... steam and focus in our province and almost confirms that what we have been doing is correct, and therefore strengthens what we were doing... It also affirmed the important role of community health care workers in service delivery. It therefore re-emphasized what we had started..."* (District Manager)

This representation of the policy, as strengthening the existing ways of doing things in the province, surfaced in interviews at lower management levels as well and appeared to form an important part of driving implementation:

*"I see it as an integrated program and actually PHC re-engineering is revamping of the PHC that we have... As we go to pilot sites we tell them this is nothing new, we are just revamping that PHC we had."* (Sub-district PHC Re-engineering Coordinator).

#### **Programme theory: Implementation structures and processes**

A number of structures to support implementation were established. These structures included the PHC Re-engineering Task Team (hereafter referred to as the Task Team), secondment of a full time coordinator or "champion" from the provincial structures, and the appointment of coordinators at district and sub-district levels. These co-ordinators served as liaison between local area managers, team leaders and management in the district office and the province. They were represented on the Task Team, which met on a monthly basis and which formed the main communication channel up and down on implementation plans, progress and problems. The membership of the Task team included the four District Chief Directors (one of whom chaired the Task team),

the Health Systems Trust (HST) and representatives of provincial Directorates for Strategic Programmes, District Health Systems, Hospitals, Finance, Monitoring and Evaluation, Communication and Human Resources.

From both observations and interviews, the Task Team was very effective and played a key role in sustaining momentum: minutes and action items were reviewed, and team members were expected to attend all meetings and report on a clearly defined set of milestones. These processes were replicated at district level, where PHC Re-engineering was a standing item on the agenda of the District Management Team meetings. As one sub-district manager commented:

*"There has never been a time we experienced a communication breakdown regarding issues of PHC re-engineering."* (Sub-district manager).

These implementation structures were significantly bolstered by the partnership with the Health Systems Trust (HST). While in absolute terms the support HST provided was not large<sup>d</sup>, a flexible and attuned approach enabled it to address a range of needs, from conducting audits, to communication between levels, local coordination and facilitation and implementation of new systems. As one sub-district manager commented:

*"The government is a machine that operates very slowly, so you would find that the HST is way ahead in terms of interpreting what needs to be implemented on the ground."* (Sub-district Manager)

HST's engagement with frontline providers was commented on by a number of interviewees:

*"They [HST] don't just end up at the district level they go down to the pilot sites speaking with the community health workers, assessing how they implement things, checking through their records."* (Sub-District Manager)

The implementation process involved a sequence of steps starting with formal planning at provincial level. This was followed by a fairly intensive sub-district process, facilitated by HST, consisting of "community dialogues", participatory planning, the nomination of CHWs and team leaders for training by district and sub-district players, the establishment of PHC outreach pilot teams (in each sub-district), and the mapping of households in pilot areas.

Combined with the orientation training provided by the national Department of Health, this local process effectively laid the ground for a reorganized and systematic approach to households and communities and changes in the work practices of CHWs. It started with an initial phase of registering and screening all



households by the teams over a period of three months, with subsequent regular follow-up of “vulnerable” households (having a pregnant woman, children under the age of five years or someone receiving treatment for a chronic illness). Processes of screening and assessment followed structured formats provided by a nationally designed M&E and recording system.

The role of the PHC outreach pilot teams appeared to be less about demonstrating proof of concept than a methodology and a process to kick start implementation, with roll out built into the initial plans from the start.

Several interviewees highlighted the positive role of the “community dialogues”. Over the space of three months eighteen dialogues, in the form of participatory workshops, were held across the province. They were attended by a wide cross section of providers, community interests and institutions including:

- Traditional health practitioners
- Traditional Leaders
- Clinic Committees
- Home Based Carers
- Support group members
- Religious representatives
- Local government
- Department of Health
- Department of Policing and Community Policing Forums
- Department of Education
- Department of Labour
- Department of Social Development
- South African Social Security Agency
- Development Partners

The community dialogues served as mechanisms for information dissemination and mobilization of support for household profiling/registration as well as the new roles of CHWs. They were also reported through local radio stations. They became seen as a vital part of negotiating entry into communities and households:

*“The implementation dialogues must be carried out for the community to be aware of what is going to happen and they must accept because if they don’t that will cause us unnecessary challenges.”* (Outreach Team Leader)

Interestingly, they also established community participation and inter-sectoral action upfront as valued elements of the PHC outreach team strategy in the North West Province<sup>e</sup>. There was evidence that outreach teams participated in local inter-departmental “social cluster” (Education, Social Development etc.) structures, were able to table issues at ward (political) meetings, and in

one ward had established successful relationships with the local Home Affairs Department.

### System inputs and resource mobilisation

By presenting the PHC outreach team policy as an extension or strengthening of core delivery functions, the province was able to mobilize the structures and resources of the district and sub-district health system, including the allocation of staff.

*“If it’s part of our mandate, then it’s in the equitable share [core budget]. It’s a good thing because we will own it 100% and we’ll plan and implement it accordingly.”* (Local area manager)

The involvement of the support cadres (human resources, finance, information) in the Task Team enabled the development of new systems such as more reliable payments of stipends, approval of transport and mobile phone allowances, and integration of the outreach team monitoring and evaluation system into the routine information system.

The Health Systems Trust played an important role in generating evidence for planning and implementation. It conducted a baseline audit of the numbers of CHWs in the province employed through non-governmental intermediaries and undertook geo-mapping of households in pilot wards to plan the household registration process. It also supported the implementation of the standardized M&E system in the province that included an mHealth pilot.

However, apart from these inputs, no additional financial resources were provided for implementation. A senior manager indicated that in the prevailing fiscal climate,

*“districts were being encouraged to “work differently” within the PHC re-engineering framework and obtain necessary budget accordingly.”*

Yet interviewees across the board saw the absence of dedicated financial resources from national or provincial government as the most significant threat to sustained implementation at scale. Funding was particularly required for the large numbers of additional nurses required as team leaders and to ensure a fairer remuneration dispensation for CHWs who were expected to work full time. Funding was also needed for vehicles for supervisory staff, supplies for the CHW kit bags, transport and cell phone allowances for CHWs, stationery, and filing cabinets for storing records. In reality, resources for implementation were being gradually mobilized from within district and provincial budgets and staff establishments, without the injection of additional external resources. Provincial managers were also actively considering alternative resourcing strategies:

*"[We should] train and use another cadre of health workers such as enrolled nurses. If we train them to be team leaders, or at least if we group wards so that one professional nurse supervises a number of wards, because we are running out of professional nurses."*

(District Director)

### Changing roles and relationships at the frontline

An audit conducted at the start of implementation identified a total 5,167 community based workers linked to the North West Provincial Department of Health, providing mainly home based care and DOTS (directly observed therapy) for TB, and 80% of whom had no accredited training. Seventy five percent were in receipt of government-funded stipends (R1,200 or US\$120 per month), channeled through community-based organisations<sup>f</sup>. Estimates in the planning phase were that about 3,500 CHWs (and +500 team leaders) would be required to achieve full coverage by PHC outreach teams in the province.

The PHC outreach team concept involved a significant reorganization of community-based services with changes in the roles, work practices and relationships amongst frontline players. CHWs were to provide comprehensive services (with induction in phases); they would be responsible for a defined number of households and take a population perspective, rather than care only for referred patients; their accountability would shift from NGO to local health facility and the formal health system and they would be actively supported by a team leader seconded from the local health facility. Finally, they were to engage with stakeholders outside the health sector.

A number of factors enabled this to happen, for the most part successfully, in the pilot sites of the North West Province. These were: 1) alignment of scopes of work, training and M&E systems (with, for example, structured processes of household screening), such that teams were able to begin their work with a sense of self-efficacy 2) community dialogues that facilitated entry in communities 3) the support and mediating roles of the team leader 4) and support and oversight from the sub-district/district management and the HST.

All the players interviewed – CHWs, team leaders, facility managers and their immediate supervisors (local area managers) – saw the value of the new approach. They believed it had brought tangible benefits in expanding access, improving performance of the health system (aspects such as vitamin A distribution, early antenatal booking, immunization coverage and retention in care of chronic cases all being mentioned), and building inter-sectoral relationships.

However, the implementation of the strategy also brought with it significant tensions. As a result many of the players at this level had an ambivalent attitude towards it. Chief

among the tensions was the decision to recruit team leaders from within the nursing staff establishment of clinics. Facilities lost a staff member as the household registration was uncovering a large amount of unmet need and creating additional workloads. They were unprepared for this:

*"I was excited for our patients because the clinics are full. So they said they will be reducing the workload for us and the clinic will be empty as there will be nurses and community health workers who will be working outside the facility. [But] the members of staff are saying they are burdened with work because the sisters working on the PHC re-engineering have all the qualifications, but they are still referring to us at the facility"* (Facility Manager)

*"I was not aware that he [team leader] will be out of the facility permanently because I expected him to come back and to still allocate work to him."* (Facility manager)

Team Leaders were faced with constant pressure to return to clinics:

*"We did our normal clinic work plus overseeing your community health care workers. ...so we actually were responsible for two jobs at that time."* (Team Leader)

Systems to reimburse team leaders for travel and communications were also not in place in all areas, and they had to *"pay from their pockets"* (Local area manager), even if eventually this was communicated and addressed through the PHC Task Team.

A second key problem was the frequently interrupted stipends of CHWs. Of the 36 CHWs interviewed in the group discussions, 20 of them had experienced some interruption in their stipend payments (for a mean of 3 months) since starting work as a lay health worker. In a subsequent visit to the province in 2013 following a period of unpaid CHW stipends, we noted that some teams were no longer functioning and professional nurses were back working in clinics. The non-payment of stipends was later resolved by moving the payment of all CHW stipends (which were simultaneously raised to R1,500 [US\$150] a month) away from NGOs and onto the provincial payroll system. In the process, the NGOs who had previously deployed the CHWs for home-based care became sidelined by the re-organisation of services:

*"They [NGOs] were also furious to say we took their people, they developed them so much for home based care and we took them for our own benefit."* (Local Area Manager)

In addition to these design or structural problems were those of process. The sheer number of players and turn-over of staff meant that the intensive efforts at communication did not always reach the coal face. One team leader was recruited for training without any explanations and then expected to change her work without her consent:

*"We were just kind of taken out of our clinic situations, pushed into it and we had to do it... it's very depressing to me because this is not really what I want to do."*

(Team Leader)

Because training was organised nationally, in some instances this was completed before facilities were prepared or community dialogues conducted. CHWs then showed up at facilities and facility managers who were not briefed *"didn't know what to do"* (Facility Manager). They faced mistrust and resistance from households. Many local clinics also did not have the space to accommodate a whole new team of players, or a growing volume of paperwork, ultimately hampering their full integration in the workings of the facility. Many facility managers did not assume the envisaged oversight and support role to the teams and this shifted to the local area managers, who were under intense pressure from the sub-district structures to deliver on PHC Re-engineering.

Difficulties at facility level were compounded by occasional visits by the national Department of Health who made their own, sometimes contradictory demands on staff, and raised expectations. During one visit, in the initial stages of policy development national stakeholders made promises regarding the improved remuneration of CHWs:

*"One very big thing in this is, they [CHWs] were promised that they will get R3,000 [US\$300] a month by national people. This was communicated in front of all the team leaders, and everybody that was present. Suddenly the new contract says R1,500 [US\$150]. I mean, is that fair?"* (Team Leader).

Broken promises were a recurring theme in the interviews with CHWs, and despite overall support, also established an element of skepticism towards the strategy.

## Discussion

Table 2 summarises the strengths and weaknesses of the PHC outreach team implementation in the North West Province. As a formative evaluation exercise, these findings were fed back to, and discussed in, the provincial Task Team. Weaknesses such as the insufficient involvement of PHC facility managers were already understood and were being addressed. Some of the key constraints,

such as fairer remuneration for CHWs, while well within the means of a middle income country such as South Africa, require policy and resource allocation shifts at national level. This did not, however, prevent the province from moving forward with a progressive roll out of the strategy.

This case study also suggests a number of lessons for thinking about the catalysts for change in primary health care systems.

While *political and senior commitment* to policy, and the policy formulation, planning and design processes that follow, are necessary, they are not sufficient for ensuring implementation. In the North West Province, the *distributed ownership and leadership* of the policy by district and sub-district managers was central to the change process, which they drove through the Task Team and well-established district and sub-district structures. The commitment of these senior and middle managers emerged from a *collective vision* that framed the policy in continuity with the past and as reaffirming long held values in the province. Implementation was presented as a process of "revamping" and "strengthening" and not as something totally new. The task was explained to provincial stakeholders as a manageable one, which would be feasibly integrated into existing budgets and systems.

While the pre-existing district health system formed a ready *context* for implementation, the establishment of *special implementation structures* – the Task team and coordinators at various levels – and the *partnership* with the NGO – were key mechanisms for bringing together line and support managers, for up and down communication and problem solving, and for holding players *accountable*.

An *implementation process* that paid attention to system *inputs* (planning, information, workforce management, training, and their alignment), selection of *pilots* and a deliberate focus on *communication* and engagement with *communities* and local managers was also important. It also allowed for local involvement in decision-making (on for example choice of pilot sites). These communication and inclusion strategies were followed immediately by a *campaign* of household profiling, which showed visible commitment to implementation, whilst simultaneously identifying and responding to unmet needs.

These attributes of the implementation process follow closely the simple rules for primary health care system change proposed by Best et al. [11]. While strongly supported from the top, middle level actors emerged as powerful players in the process (designated with distributed leadership). They established the continuity of the policy process with the past (paying attention to system history). The Task Team provided a mechanism for identifying and resolving problems (feedback loops). Deliberative processes engaged end users and lower level managers and

**Table 2 Summary of strengths and weaknesses of implementation**

Dimension	Strengths	Weaknesses
Knowledge and ownership of the strategy	High level of knowledge and ownership amongst senior and middle level managers, and to a large extent, amongst CHWs and team leaders;	Primary health care clinic managers less well briefed and not fully owning the strategy;
Early implementation strategy	Establishment of PHC Task team and NGO partnership;  Alignment of systems (roles with training and M&E systems);  Appropriate sequencing of activities;  Community and local manager participation;	Sustaining intensive communication and engagement processes with local managers and communities in roll out phases;
Mobilization of resources and system inputs	Involvement of key directorates (HR, financing, information) in PHC Task team;  Integration of strategy into district budgets;	Team leaders appointed from existing staff establishments thus creating pressures on PHC facilities;  No additional resources to ensure better CHW remuneration;  Limited pool of professional staff to lead teams;  Strains on local clinic infrastructure;
Changes in service delivery	Evidence of widespread adoption of new model;  Supported by sub-district and local area managers.	Uneven integration into local PHC clinics.

(to some extent) front line providers in participative decision-making.

Against this story of organisational and implementation strengths, however, is the difficult and more contested experience at the front-line of implementation. Implementation of the policy required not only changes in practices but also a shift in the allocation of resources, felt most acutely in local facilities and the NGOs from whom the CHWs were moved to the provincial system. Yet compared to other actors, facility managers appeared less informed and interactions with them were governed more by hierarchy and instruction, than consultation and collaboration. While supporting the new strategy, they also frequently expressed reservations, and sought to limit its impact on their own daily work and their participation in it. During the evaluation it became clear that that facility managers were a key cadre of health worker that should have been targeted with more direct communication on the new PHC strategy. While in this instance front line players (nursing professionals) may not have had the power of medical professionals in other systems to disrupt or prevent implementation, the case study highlights the crucial role of “street level bureaucrats” in policy processes and the discretionary spaces they exercise [18].

It appears that with time, however, there was adaptation to and acceptance of the new realities. Long standing and strongly held collective visions, the persistent efforts through the Task Team to resolve at least some of the problems and ongoing processes of accountability through sub-district and district structures, may have played some part in this.

The experience of the North West Province also has relevance for thinking about processes of scale up and governance, which, according to Liu et al. [23] have been inadequately theorized or documented in relation to CHW programmes. In their review of national CHW programmes in India, Pakistan and Ethiopia and Brazil, they point to the quality of background PHC systems as key to the strength and sustainability of CHW initiatives and further highlight the need for coordinated management across levels of the health system [23]. Both were key features of the North West Provincial case study. In contrast, a policy analysis of the establishment of the community health assistant cadre in Zambia, showed how inadequate attention to design and consultation and the privileging of powerful actors, including donors, produced a policy outcome that had low buy-in and limited chances of implementation [24].

## Conclusions

Against an apparently favourable backdrop, the “simple rules” of primary health system change described in other settings provided a plausible framing of how changes were achieved in the implementation of PHC outreach teams in the North West Province. They required attention to both the establishment of systems (finance, human resource, information etc.) and processes of deliberation and negotiation. In particular, the case study highlights how a collective vision can facilitate commitment to and engagement with new policy in complex organisational environments.

But if early processes powerfully set the stage and tone of further implementation, it is important to recognise



that initiating whole-system change does not guarantee its sustainability over time. In the case of the North West Province, this will require persistence at all levels and an ongoing ability to learn, problem-solve, adapt and renew. At the time of writing, the project partnerships and implementation structures in the North West Province were still in place. If these were no longer in place, would implementation continue? Further evaluations would want to assess not only the extent to which processes such as training and information have become institutionalised in district systems, but also the degree to which front line actors and their supervisors are more knowledgeable and meaningfully engaged with outreach teams. As pointed out by numerous stakeholders, it is hard to envisage full coverage of the PHC outreach team strategy in the North West Province without additional resources (both people and funding). This will require a willingness to adapt elements of design (such as the team leader cadre) and mobilising additional resources for the strategy at national level.

Finally, the transferability of the “simple rules” identified in the North West Provincial case study to other contexts would need to be tested empirically. The notion of simple rules does, however, provide a way to consider the interactions between processes, contexts and interventions in designing and implementing health system reforms.

## Endnotes

<sup>a</sup>Extracted from routine DHIS data. In the other provinces, reported HH visits per population in 2013 varied from 10% to 65% of the North West Province levels.

<sup>b</sup>Defined as “stakeholders implicit and explicit assumptions on what actions are required to solve a problem” [22]

<sup>c</sup>See for example: North West gears up to improve primary health care <http://www.sanews.gov.za/south-africa/north-west-gears-improve-primary-health-care>

<sup>d</sup>The technical support included two full time equivalent staff with additional technical support for ad hoc activities: one staff member for three months to assist with community dialogues; two researchers for two months to complete CHW audit; one technical expert for one month to complete GIS mapping; six data captureurs for two months to complete electronic capture of household profiles; and oversight/technical support from senior staff.

<sup>e</sup>As spelt out in a provincial PHC Re-engineering pamphlet: “acceptance by the community and their participation in community-based health services is key to improving health outcomes.”

<sup>f</sup>Jassat W. PHC Outreach Teams: North West Experience. Presentation to CHW Symposium, UWC, 7 June 2012.

## Abbreviations

CHW: Community health worker; DHS: District health system; HST: Health systems trust; NPO: Non-Profit Organisation; PHC: Primary health care; UWC: University of the Western Cape.

## Competing interests

The authors declare that they have no competing interests.

## Authors' contributions

All authors participated in the design of the study, analysis of data, and drafting of the study report; all but HS collected data; HS drafted the manuscript on the basis of the study report, which all authors commented on or approved.

## Acknowledgements

We are grateful to the senior managers, district, sub-district, PHC, local area and facility managers, team leaders and CHWs in the North West Province whose cooperation made this assessment possible. We would also like to acknowledge the input of our colleagues: Waasila Jassat, Sarah Rohde, Busi Nkosi, Tumelo Mampe, Ayako Honda, Ermien van Pletzen and Bruno Marchal. The content of the paper, however, remains the responsibility of the authors. The conduct of the field work and involvement of co-authors was made possible by a range of funding sources including the Atlantic Philanthropies (UWC), Centers for Disease Control (UWC), the South African Department of Health (HST), and the European Commission's Seventh Framework Programme (FP7-CP-FP-SICA, grant agreement number 261349) (UCT).

## Author details

<sup>1</sup>School of Public Health, University of the Western Cape, Robert Sobukwe Road, Bellville, Cape Town 7535, South Africa. <sup>2</sup>Health Systems Trust, Block B, Aintree Office Park, Doncaster Road Kenilworth, Cape Town 7700, South Africa. <sup>3</sup>Health Systems Trust, 34 Essex Terrace, Westville, Durban 3630, South Africa. <sup>4</sup>School of Public Health & Family Medicine, University of Cape Town, Anzio Road, Observatory, Cape Town 7925, South Africa.

Received: 6 July 2014 Accepted: 17 November 2014

Published online: 29 November 2014

## References

- Perry HB, Zulliger R, Rogers MM: **Community Health Workers in Low-, Middle-, and High-Income Countries: An Overview of Their History, Recent Evolution, and Current Effectiveness.** *Ann Rev Public Health* 2014, **35**:399–421.
- The Earth Institute: *One Million Community Health Workers: Technical Task Force Report.* New York: Columbia University; 2011.
- Third Global Forum on Human Resources for Health: *Output document: Side Session on Community Health Workers and other Front Line Health Workers: Moving from Fragmentation to Synergy to Achieve Universal Health Coverage.* Recife, Brazil: The Global Health Workforce Alliance (GHWA); 2013.
- National Department of Health: *Re-engineering primary health care in South Africa: Discussion document.* Pretoria: Department of Health; 2010.
- Ogden J, Esim S, Grown C: **Expanding the care continuum for HIV/AIDS: bringing carers into focus.** *Health Policy Plan* 2006, **21**(5):333–342.
- Schneider H, Lehmann U: **Lay health workers and HIV programmes: implications for health systems.** *AIDS Care* 2010, **22**(Suppl 1):60–67.
- National Department of Health: *CHW Audit Report Draft 1.* Pretoria: NDOH; 2011.
- De Savigny D, Adam T: *Systems Thinking for Health Systems Strengthening.* Geneva, Switzerland: World Health Organization, Alliance for Health Policy and Systems Research; 2009.
- Macfarlane F, Greenhalgh T, Humphrey C, Hughes J, Pawson R: **A new workforce in the making? A case study of strategic human resource in healthcare.** *J Health Organ Manag* 2011, **25**(1):55–72.
- Greenhalgh T, Humphrey C, Hughes J, Macfarlane F, Butler C, Pawson R: **How do you modernize a health service? A realist evaluation of whole-scale transformation in London.** *Milbank Q* 2009, **87**(2):391–416.
- Best A, Greenhalgh T, Lewis S, Saul JE, Carroll S, Bitz J: **Large-system transformation in health care: a realist review.** *Milbank Q* 2012, **90**(3):421–456.
- Sheikh K, Gilson L, Agyepong IA, Hanson K, Ssengooba F: **Building the Field of Health Policy and Systems Research : Framing the Questions.** *PLoS Med* 2011, **8**(8):e1001073.
- World Health Organization: *Everybody's Business: Strengthening Health Systems to Improve Health Outcomes: WHO's Framework for Action.* Geneva, Switzerland: World Health Organization; 2007.
- Berman PA, Gwatkin DR, Burger SE: **Community-based health workers: head start or false start towards health for all?** *Soc Sci Med* 1987, **25**:443–459.

15. Walt G, Perera M, Heggenhougen K: **Are large-scale volunteer community health worker programmes feasible? The case of Sri Lanka.** *Soc Sci Med* 1989, **29**:599–608.
16. Gilson L, Walt G, Heggenhougen K, Owuor-Omondi L, Perera M, Ross D, Salazar L: **National community health worker programs: how can they be strengthened?** *J Public Health Policy* 1989, **10**:518–532.
17. Plsek PE, Greenhalgh T: **Complexity science: the challenge of complexity in health care.** *BMJ* 2001, **323**:625–628.
18. Lipsky M: *Street Level Bureaucracy: Dilemmas of the Individual in Public Service.* 30th Ann. New York: Russell Sage Foundation; 2010.
19. Barrett SM: **Implementation Studies: time for a revival? Personal reflections on 20 years of implementation studies.** *Public Adm* 2004, **82**(2):249–262.
20. Padayachee T, Chetty N, Matse M, Mampe T, Schneider H: **Progress in the establishment of Ward Based Outreach Teams: Experiences in the North West Province.** In *South African Health Review 2013/14*. Edited by Padarath A, English R. Durban: Health Systems Trust; 2014.
21. Yin RK: *Case Study Research: Design and Methods.* 5th edition. Thousand Oak, California: Sage Publications, Inc; 2014.
22. Chen H-T: *Practical Program Evaluation: Assessing Planning, Implementation and Effectiveness.* Thousand Oaks, California: Sage Publications, Inc; 2005.
23. Liu A, Sullivan S, Khan M, Sachs S, Singh P: **Community Health Workers in Global Health: Scale and Scalability.** *Mt Sinai J Med* 2011, **78**:419–435.
24. Zulu JM, Kinsman J, Michelo C, Hurtig AK: **Developing the national community health assistant strategy in Zambia: a policy analysis.** *Health Res Policy Syst* 2013, **11**:24.

doi:10.1186/s12913-014-0609-y

**Cite this article as:** Schneider et al.: Whole-system change: case study of factors facilitating early implementation of a primary health care reform in a South African province. *BMC Health Services Research* 2014 **14**:609.

**Submit your next manuscript to BioMed Central and take full advantage of:**

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at  
www.biomedcentral.com/submit



## **Paper 4**

Schneider H, Nxumalo N. Leadership and governance of community health worker programmes at scale: a cross case analysis of provincial implementation in South Africa. Forthcoming in: International Journal for Equity in Health.

### **Paper overview**

This paper is a cross case analysis of WBOTs adoption and implementation, drawing on the two published case studies and a third from Gauteng Province. Using an inductive analytic approach, it draws together insights from the three different provincial contexts in seeking to define governance and leadership roles in the sub-national adoption of implementation of CHW programmes at scale. It highlights how sub-national players are far from passive recipients of national policy and the active stewardship required at this level to reinterpret, assimilate and implement policy.

### **Contribution to the thesis and novelty**

This paper addresses the fourth objective of the thesis, namely to propose key roles for the governance and leadership of CHW programmes that draw on diverse provincial contexts and experiences with WBOTs adoption and implementation. These roles form the basis for the multilevel governance and leadership framework in the discussion chapter (Objective 5) which follows the cross case analysis. The paper adds empirical insights and conceptual understanding of the sub-national governance and leadership of CHW at scale.

### **Contribution of candidate**

The cross case analysis was conceived and conducted by the candidate, with the co-author providing the material for the third case study. The latter commented critically on and approved the final manuscript.

**Leadership and governance of community health worker programmes at scale: a cross case analysis of provincial implementation in South Africa**

Forthcoming: International Journal for Equity in Health

Helen Schneider

School of Public Health & SAMRC/UWC Health Services to Systems Unit, University of the Western Cape, Robert Sobukwe Road, Bellville, Cape Town, 7535

Tel: +27-21-9593563/2132

Email: [hschneider@uwc.ac.za](mailto:hschneider@uwc.ac.za)

Nonhlanhla Nxumalo

Centre for Health Policy/MRC Health Policy Research Group; School of Public Health, Faculty of Health Sciences, University of the Witwatersrand.

Email: [nonhlanhla.nxumalo@uwc.ac.za](mailto:nonhlanhla.nxumalo@uwc.ac.za)

Corresponding author:

Helen Schneider



## Abstract

**Background:** National community health worker (CHW) programmes are returning to favour as an integral part of primary health care systems, often on the back of pre-existing community based initiatives. There are significant challenges to the integration and support of such programmes, and they require coordination and stewardship at all levels of the health system. This paper explores the leadership and governance tasks of large-scale CHW programmes at sub-national level, through the case of national reforms to South Africa's community based sector, referred to as the Ward Based Outreach Team (WBOT) strategy.

**Methods:** A cross case analysis of leadership and governance roles, drawing on three case studies of adoption and implementation of the WBOTs strategy at provincial level (Western Cape, North West and Gauteng) was conducted. The primary case studies mapped system components and assessed implementation processes and contexts. They involved teams of researchers and over 200 interviews with stakeholders from senior to frontline, document reviews and analyses of routine data. The secondary, cross case analysis specifically focused on the issues and challenges facing, and strategies adopted by provincial and district policy makers and managers, as they engaged with the new national mandate. From this key sub-national leadership and governance roles were formulated.

**Results:** Four key roles are identified and discussed:

1. Negotiating a fit between national mandates and provincial and district histories and strategies of community based services
2. Defining new organisational and accountability relationships between CHWs, local health services, communities and NGOs
3. Revising and developing new aligned and integrated planning, human resource, financing and information systems
4. Leading change by building new collective visions, mobilising political, including budgetary, support and designing implementation strategies.

**Conclusions:** This analysis, from real-life systems, adds to understanding of the processes involved in developing CHW programmes at scale, and specifically the negotiated and

multilevel nature of leadership and governance in such programmes, spanning analytic, managerial, technical and political roles.

**Key words:** community systems, community health workers, community health system strengthening, national CHW programmes, governance, leadership, stewardship, strategic management

## Introduction

Community health workers (CHWs) have a long and varied history in health systems, recently regaining attention [1]. There is well-established evidence on the role of CHWs and community based health action in improved health outcomes, and increasing consensus on their importance in primary health care (PHC) systems and in achieving universal health coverage [2][3]. CHW programmes promote equity by increasing access to health care in remote areas, and by playing a mediating role between the formal health system and marginalised populations [4]. A growing list of low and middle income countries, such as Brazil, Ethiopia, Malawi, Bangladesh, Nepal, amongst others, have recognised national CHW programmes [5], while others are formulating or revising national CHW policies[6][7].

If they are to contribute meaningfully to health gains and realize their potential at scale, national CHW programmes require careful thought, planning and extensive support [8][9][10]. They need to be integrated into PHC systems whilst simultaneously embedded in and supported by communities [11]. The development and strengthening of national CHW programmes is made complex by the fact that they have prior histories and do not occur on a blank slate. Most countries have pre-existing community based initiatives of some kind, which more often than not exist on the margins of the formal health system. They are also neglected in health workforce planning, and deployed in fragmented, disease specific and uncoordinated ways [2].

How, then, should the strengthening of national CHW programmes be approached? McCord et al [12] proposed that CHW programmes be regarded holistically as a sub-system of the overall health system, and using the World Health Organization (WHO) “building blocks” framework of a health system [13], they offer a comprehensive approach to CHW programme strengthening, encompassing the dimensions of service delivery, workforce planning, information systems, supply chains, financing and leadership and governance. A recent, wide ranging manual, developed for USAID’s Maternal and Child Health Integrated Program (MCHIP) provides similar guidance, whilst also emphasising the relational and process dimensions of national CHW programmes, such as planning, partnerships and scaling up [5].

Of the health system building blocks, “*arguably the most complex but critical*” [13] is that of leadership and governance, the building block which enables and holds the others together. Leadership and governance are not easy concepts to pin down. WHO defines them as “*the oversight and guidance of the whole system, public and private, to protect the public interest*”, and includes “*ensuring strategic policy frameworks exist and are combined with effective oversight, coalition-building, the provision of appropriate regulations and incentives, attention to system-design, and accountability*” [13]. In this definition, leadership and governance are focused on overall structures and design, generally at national level, with some attention paid to processes (such as coalition building).

A newer generation of approaches take a broader view of governance and leadership as not just a property of national governments, but as distributed within systems, involving an array of actors, and as straddling design and implementation. For example, Brinkerhoff & Bossert [14] bring into focus the roles of providers and citizens in governance relationships. From the field of implementation science, the PARIHS (Promoting Action on Research Implementation in Health Services) framework, foregrounds the leadership and governance of implementation [15]. Hill and Hupe’s multiple governance framework proposes three forms of governance, focused on overall design and setting of rules (constitutive governance), detailed decision making (directive governance) and managing implementation (operational governance) [16]. Drawing on similar concepts, Abimbola *et al* [17] outline a multi-level governance framework for plural PHC systems that is centred on the decision-making of, and accountability relationships between, local providers and communities, situated within overall national frameworks.

Reflecting these currents of thinking, Lewin and Lehmann [18] approach the issue of CHW programme governance as establishing the architecture, relationships, decision making and participation structures of programmes. This includes whether CHWs should be part of the formal health system or managed separately, the extent of decentralised decision making, and mechanisms of community participation. They emphasize that “*because CHW programs are located between the formal health system and communities and involve a wide range of stakeholders at local, national, and international levels, their governance is complex and relational.*” [18] There is also an overlap of governance and management, where the latter is “*more concerned with running or implementing programs*” [18].

Together these various ideas on CHW programme governance and related concepts such as leadership, strategic management and implementation, point to a set of distributed functions that span policy development and systems design, structures and mechanisms for coordination and participation, and programme implementation. They are not just concerned with the “what” of CHW programme policy, but also with the “how” of implementation and scaling up. Specifically, CHW programmes require engaging a more complex and plural set of players - extending into communities - than is normally the case with other sub-systems of the health sector.

On the whole, however, thinking on CHW programme leadership and governance is undeveloped. Where it exists it is oriented to questions of national policy and design of programmes, and much less on the sub-national dynamics of decision-making, policy adaptation, refinement and implementation within health systems. In many health systems, managers and implementers are having to implement reforms to community based health systems. Faced with new, often incompletely elaborated national mandates, how do they turn CHW programme policy into reality?

Drawing on notions of CHW programme leadership and governance as distributed in health systems and as more than the constitutive (design) dimensions [16], this paper provides an empirical case study of reforms to the community based health sector in South Africa. It asks the question: What do provincial experiences with the adoption and implementation of the Ward Based Outreach Team (WBOT) Strategy in South Africa offer for an understanding of the governance and leadership of CHW programmes at scale? Based on case studies of the early implementation of the community based strategy in three provinces (North West, Western Cape and Gauteng), an inductive cross case analysis was conducted, with the objective of identifying leadership and governance roles and tasks required in national CHW programmes.

## **Background**

South Africa is a middle income country, providing health care through a tax funded public health system to 84% of the population, with the remainder receiving care in a parallel private sector, funded by costly private health insurance, and entrenching massive

inequities in expenditure on health. However, access to nurse-based PHC is reasonably good, with 90% of South Africans living within 7 km of the nearest public clinic [19]. Despite this, South Africa still has very high levels of avoidable mortality caused by burdens of both communicable and non-communicable disease, as well as injury and violence. Much of this burden is preventable, and there is an urgent need to strengthen the preventive and promotive responses of the PHC system.

To this end, as part of a broader set of reforms, South Africa is seeking to reorient a loosely structured and highly diverse community care system that emerged organically around HIV (human immunodeficiency virus) and tuberculosis (TB), into a formalized, comprehensive and integrated CHW programme. The community care system was for the most part implemented through community based organisational intermediaries, many of whom were subsidised by government through HIV/TB budget lines. Inspired by the success of the Brazilian Family Health Programme, a “PHC Re-engineering” Task Team was appointed by the Minister of Health in 2010 to develop proposals for the reorganisation of community based services. In a “Discussion Document” [20] the Task Team outlined a set of proposal for the establishment of “Ward Based Outreach Teams” of CHWs, led by professional nurses (referred to as “Outreach Team Leader”), linked closely with other community based providers (e.g. environmental health officers), and local PHC facilities. They would be assigned to electoral wards, responsible for a defined number of households and accountable to the local health facility. The Discussion Document also proposed that CHWs be incorporated into the health system as part of the formal health workforce. The roles of teams were to be comprehensive: extending beyond HIV/TB to include maternal-child health and chronic non-communicable diseases; with preventive and promotive, in addition to care orientations, and mobilising cross-sectoral collaboration on the social determinants of health.

South Africa has a quasi-federal political system where the national sphere sets policy and nine provincial governments (and their elected legislatures) bear the main responsibility for the delivery of health services. It is thus a system with considerable decentralised authority and decision making. With respect to the Ward Based Outreach Teams (WBOs), the national Department of Health (NDOH) defined an overall model and roles, developed a curriculum (with the ultimate goal of national certification), provided initial training and designed a routine monitoring system linked to the national District

Health Information System. It stopped short of providing ring fenced funding (as it had with other national priority initiatives), and the detailed design and implementation of the WBOT's strategy was left to provinces, which proceeded to adopt and adapt the strategy in varying ways and at different paces. While a formal WBOT policy is still in the process of being finalised, the concept is firmly anchored in the White Paper on National Health Insurance (NHI) and the subject of system strengthening initiatives in “pilot” NHI districts across all nine provinces [21].

## **Methods**

### *Primary case studies*

The case study method is an investigation of a real-life and contemporary phenomenon with reference to its context [22]. The primary case studies were conducted over a one year period in 2012/13 in the North West, Western Cape and Gauteng Provinces. The three case studies formed part of a national researcher collaboration, funded through a number of sources, to describe the “what” and “how” of early implementation of the WBOT strategy at provincial level. The North West Province was selected because of its role as a “revelatory” case [22] of successful early implementation. The two other case studies (Western Cape and Gauteng) were embedded within existing relationships and projects of the researchers in these provinces, and selected because of this. The scope and intensity of data collection was thus different in each province (Table 1). In the Western Cape, additional funding from the provincial government allowed for a fuller appraisal. In Gauteng, on the other hand, a combination of fragmented implementation and limited resources for the study resulted in the focus on one district only, and was the smallest of the three case studies.

Despite these differences, each case study was concerned with documenting the same phenomenon, and drew on jointly developed tools and methods, adapted to local needs and resources. The case studies mapped system components (based on a health system framework[23]) relevant to the new policy, and assessed implementation contexts and processes[24]. Data collection included in-depth interviews (audio recorded, transcribed and analysed thematically) with a cross section of health system actors, from decision-makers to front-line, observations of practices and processes, patient and community interviews, reviews of documentary sources and analysis of routine data (Table 1).

Table 1: Provincial contexts and data collection

Province	North West	Western Cape	Gauteng
Population	3.7 million mostly rural	6.2 million mixed urban/rural	13 million mostly urban
Per capita GDP (US\$ 2010)*	6,700	8,700	9,700
Districts/Sub-districts	4 districts 19 sub-districts	6 districts 32 sub-districts	5 districts 27 sub-districts
Sampling	Provincial level plus all 4 districts	Provincial level plus 2 districts in depth	One pilot district
1. Interviews			
<i>Senior Management</i>			
Individual interviews	4	23	1
Group interviews	1		
<i>Middle and frontline management</i>			
Individual interviews	14	26	4
Group interviews	1		
<i>WBOTs/NGOs</i>			
Individual interviews	9	35	1
Group Interviews	7	5	1
<i>Community members</i>			
Individual interviews		16	
Group interviews		5	
<i>Other**</i>		13	
Total	27 individual, 9 group interviews	113 individual, 10 group interviews	6 individual, 1 group interview
2. Observations	Provincial Task Team	23 CHW home visits	Health Post structure
3. Document reviews	Policies, plans, project reports, parliamentary speeches, training guides		
4. Routine and audit data	Household profiling; audit of CHW workers	Database of CHWs and NGOs	
* Source: <a href="https://en.wikipedia.org/wiki/List_of_South_African_provinces_by_gross_domestic_product_per_capita">https://en.wikipedia.org/wiki/List_of_South_African_provinces_by_gross_domestic_product_per_capita</a> ** Other = other sectors (education, social development ), traditional healers, private providers			

The North West and Western Cape case studies involved teams of researchers from diverse backgrounds, who analysed data in an iterative process, starting with individual data sources, followed by triangulation and convergence towards key themes. Being more limited in scope, the Gauteng study was analysed by two researchers. All three case



studies undertook careful processes of member checking (feedback and discussion with respondents) before finalization. The trustworthiness of the findings was enhanced by the collective experience and tacit knowledge of the research teams, able to contextualize and make sense of findings. Full accounts of the provincial contexts, case study research strategies and findings are reported elsewhere and summarized below [25][26][27]. Each case study received ethics clearance from an institutional review board.

### *Overview of cases*

#### Case Study 1: North West Province

The North West Province was an early and enthusiastic adopter of the WBOT's Strategy. Within a year of the national proposals, the Province had begun implementation and by the time the case study was conducted (late 2012), pilot teams were established in all sub districts and more than 40,000 households had been visited. Scale up has continued since, and by 2015 [28], more than 300 WBOTs were active across the Province, giving it the highest coverage of wards (72.6%) in the country. The case study sought to identify the factors underlying the successful and rapid implementation of the strategy in the province. The key insights offered were the active provincial strategies of implementation adopted and the forging of common collective visions, against a backdrop of well-established district and sub-district structures.

#### Case study 2: Western Cape Province

One of the authors (HS) formed part of a team commissioned in 2013 to conduct a situation appraisal of the existing NGO-contracted home and community based care services in the province, as part of a broader provincial strategic planning process (referred to as Healthcare 2030). Up to then the province had resisted the national WBOT's proposals, specifically opposing moves to do away with NGO intermediaries and incorporate CHWs into the provincial staff establishment. However, the Healthcare 2030 Strategy ultimately proposed far reaching changes to the community based health services in line with the national strategy [27]. The situation appraisal thus identified the key design challenges to reshaping the existing community based services to the new goals in a setting where political and stakeholder commitment to the new ideas was mixed.

#### Case study 3: Gauteng Province

In contrast to the other two provinces, the Gauteng provincial authorities did not take an active stance for or against the WBOT's policy, essentially acting as a conduit for the communications from the national department to the five districts. This province had an established infrastructure of district family medicine practitioners, linked to the three universities, who had already been experimenting with different models of community oriented PHC. The districts were asked to integrate the WBOT strategy into their existing models and by 2015, 55% of wards had WBOTs [28]. One of the co-authors (NN), conducted an assessment of this integration and assimilation process in one district, Sedibeng, selected as an initial pilot site for implementation of the WBOT Strategy. This case study provided insight into how district actors who have already reorganised their community-based services engage with top-down mandates, and the role of local stewards in negotiating the fit between the two.

#### *Cross case (secondary) analysis*

A qualitative, descriptive, cross case analysis of leadership and governance roles was conducted after the three case studies had been completed and written up. The cross case analysis was an embedded unit of analysis in that it focused specifically on the issues and challenges faced, and the strategies adopted, by provincial and district policy makers and managers as they engaged with the new national mandate (the “case”). Drawing on the opportunity offered by three distinct sets of experiences, attitudes and contexts, the analysis was able to ensure maximum variability in what Yin (22) refers to as the “replication logic” of sampling – the study of the same phenomenon in different contexts. In an inductive process, each case study report (including findings, discussion and conclusion) was read and specifically coded for potential leadership and governance roles/tasks/challenges/strategies. Informed by policy analysis approaches (29), codes were then categorised into broad themes (e.g. provincial adoption of policy, actor roles and responsibilities). In this manner, key findings from each case were surfaced and patterns matched with those of the other cases. Each case added unique insights as well as confirmation of patterns in the other cases. From this, a set of governance or leadership tasks or roles for CHW programmes at scale were formulated.

The cross case analysis was conducted by the first author (HS), who had led two of the original case studies, while the co-author (NN), who had led the third case study, provided a critical mirror on the plausibility of the analysis. The analysis remained at a

descriptive level, and did not seek to build theory on cause-effect relationships (e.g. what explains success or failure of implementation and/or governance and leadership?). It also did not formally test rival formulations of roles, but drew substantively on the findings and interpretations of the individual case studies, which themselves had undergone extensive validity checks.

## **Results**

The key issues facing, stances adopted and strategies deployed by the provincial and district policy makers/managers arising from the three case studies are summarised in Table 2. They have been grouped into the broad themes of provincial policy adoption and formulation; reallocation of roles and responsibilities; the development of new systems; and leading and managing change. These are described in more detail in the narrative that follows.

**Table 2: Key leadership and governance themes identified in case studies of WBOTs implementation**

Broad L&G function	Province		
	North West	Western Cape	Gauteng
Policy formulation/ adoption	Long standing and widespread support for the district health system and PHC led to ready acceptance and early adoption of the policy	A well-established and reasonably governed system of NGO contracting for community based care perceived as different to national WBOTs strategy and led to minimal initial adoption, but later formulation of a comprehensive strategy	District based nodes of innovation, led by family physicians and following unique local designs (“health posts”), led to a complex negotiated process of accommodation and adaptation of the WBOTs policy at local level
Reallocation of roles and responsibilities	<p>In all three provinces the reorientation of community based services implied new roles, relationships and mindsets amongst all role players in the community based, PHC and district health systems</p> <ul style="list-style-type: none"> <li>- local health facilities and managers had to play new oversight and coordination roles and be willing to allocate resources (staff, space) in support of teams</li> <li>- new relationships had to be developed with communities and community structures</li> <li>- the roles of the NGO sector had to be redefined</li> <li>- (sub)-district systems had to play a stronger priority setting, planning and monitoring role</li> </ul>		
Development of new systems	<p>In all three provinces, community based services have existed on the margins of the health system, with poorly developed and integrated human resource, financing and information systems. Greater expectations of performance of the community based sector have demanded changes in these systems:</p> <ul style="list-style-type: none"> <li>- payment of CHW stipends shifted from NGOs to government payroll systems to ensure regular payment (in two provinces)</li> <li>- improved support and supervision from professionals</li> <li>- new curricula and training processes instituted for standardised and comprehensive roles</li> <li>- new M&amp;E systems developed that are aligned with new roles and integrated into the routine district health information systems, and piloting the use of mHealth</li> </ul> <p>However:</p> <ul style="list-style-type: none"> <li>- Financing is still largely from special budget sources (such as HIV/AIDS and TB conditional grants), received from national government, and only partially integrated into core provincial resource allocation mechanisms</li> <li>- Remuneration, conditions of service and career pathing for CHWs have not been adequately addressed</li> <li>- Recruitment and funding of Outreach Team Leaders a key factor in future sustainability</li> </ul>		
Leading and managing change	Rapid adoption of the strategy followed a common collective vision about WBOTs that led to strong leadership of the process at district and sub-district levels. This was accompanied by deliberate scale up processes: planning, piloting, community “dialogues”, implementation support structures, including feedback and accountability	At the time of the case study, the province was still in policy formulation stage. In subsequent months there was an incremental process of negotiating new roles and modes of delivery with NGO partners, and developing new training and M&E systems. Piloting of comprehensive roles planned at district level (in the NHI pilot site).	Changes happened prior to new policy. The leadership role of family physicians in partnership with DHS management was key, and led to the development of a unique district model. Involved extensive local alliance building (including mobilising local financial resources for implementation)
	All provinces face the challenge of generating political, including budgetary commitment, and developing the case for greater investment and resources for WBOTs		

### *Policy adoption and formulation at provincial level*

Given the relatively loose, unfunded mandate from the national sphere, provincial attitudes to implementation of the WBOT's strategy differed. Provincial leaders in the North West Province (NWP), where political and senior managerial commitment was high, regarded it as an affirmation of long standing values and orientations towards PHC in the province. As pointed out by one manager: *"The elements of PHC re-engineering have long been implemented in the North West... The official adoption by the national department of the PHC re-engineering as a model upon which to push our service delivery ....confirms that what we have been doing is correct, and therefore strengthens what we were doing..."* (District Manager, NWP). Similar understanding and ownership were evident across all levels of the system, including amongst the CHWs themselves. The fit of the new policy with existing values and approaches was thus unproblematic in this province.

In the Western Cape (WC), the WBOT's strategy was seen as distracting from unfolding trajectories and "ways of doing things" in community based services, and had mixed support in the province. Senior managers initially rejected the national PHC Re-engineering proposals, a stance regularly taken by this province in relation to the national sphere. However, the situation appraisal documented widespread support at district and sub-district levels for a re-organisation of the community-based sector towards more comprehensive and population oriented approaches. In line with a wider provincial commitment towards "wellness" and "wellbeing", the province proposed an extensive re-organisation of its community-based services in the Healthcare 2030 strategy. However, it retained the service delivery model of non-governmental organization (NGO) intermediaries: *"The NGO model has a lot to offer, let's figure out how to do it better."* (Senior Provincial Manager, WC). Since then, it has focused on negotiating an incremental widening of CHW roles with the NGO sector, and is piloting new approaches to delivery in various parts of the province, including the nationally supported NHI pilot site.

In the Sedibeng District of Gauteng Province (GP), the adoption of WBOTs confronted an already developed local model of outreach called "health posts", led by a Cuban-trained family practitioner. Health posts are basic physical structures, often constructed with resources mobilised from local communities, as satellite delivery sites for clinics and

community health centres. The health posts are staffed by a professional nurse (recruited from a pool of retired nurses) and a team of CHWs, and bring preventive services and chronic disease follow-up and distribution of medicines closer to the community. When the WBOTs were introduced *“there were meetings and we were informed about what national wants ... we had already been having PHC Re-engineering, although we were calling it health posts, but they said the name must change, it must be PHC Re-engineering, then that’s it”* (Sub-District Manager, GP) *“The whole project had to be re-adjusted according to what the [national] minister wanted.”* (District Manager). The district did not want to do away with the health posts because *“communities are already comfortable with that system [health post]. If we now start to close or change they might feel we are really playing games with them”* (District Manager) and settled on a hybrid model where health posts became referred to as “Ward Based PHC team sites”.

#### *Reallocation of roles and responsibilities*

The community-based health sector in South Africa developed from the late 1990’s as a government supported, NGO-based service focused on provision of care and support for people with HIV and TB. With varying degrees of formality, it related to a diffuse set of players including hospitals, step down and palliative care facilities, HIV/TB providers, welfare sector and other NGOs. It did not therefore emerge as a structured extension of the PHC system, and government funding for NGOs was channeled through HIV/TB programmes.

The WBOTs strategy proposed a shift towards comprehensive CHW roles and pro-active engagement with households and communities, with a primary link to the PHC system. These involve a significant reconfiguration of local relationships between PHC professionals, CHWs and communities. Health facilities and sub-district managers have to play new oversight and coordination roles and be willing to allocate resources (staff, space) in support of outreach teams; they need to engage more actively with the diverse array of actors within communities, and shift from mindsets of treatment to prevention and promotion. Prevailing organisational cultures are generally not in support of this.

In the North West Province, the expectation that PHC clinics would provide the WBOTs team leaders from within their own staff establishment was met with surprise and in some instances, resistance: *“I was not aware that he [the team leader] will be out of the*

*facility permanently because I expected him to come back and to still allocate work to him”* (PHC facility manager, NWP) In both this province and the Western Cape the dominant attitudes of PHC professionals towards CHWs was to regard them as subordinate cadres and not as agents with independent knowledge of community life and capable of judgment and discretionary action. While the role of the team leader as a support system was viewed very positively by CHWs in the North West, relationships with health facility staff remained precarious and a source of considerable dissatisfaction. Team members were constantly under pressure to work in clinics: *“If there is a shortage of staff like this month ... they were taking us to work that clinic and then many go to work in that clinic. That is what happens.”* (Outreach Team Leader, NWP).

The case of Sedibeng demonstrates how local leadership from the sub-district management team and the family medicine practitioner, attuned to community oriented PHC, can successfully mediate these new relationships. They also strengthened the hand of the outreach teams through the health posts, which provided an autonomous physical space for WBOs that did not rely on the goodwill of PHC facility staff, whilst also indirectly addressing the need to alleviate the pressure from overcrowded PHC clinics. However, it introduced a new line of accountability (the professional nurse at the health post reports to the facility manager at the PHC clinic).

A more visible and systematic approach to households and communities requires a level of buy-in and participation that was not necessarily the case in the more limited care and referral system of the past. As explained in Sedibeng: *“Implementation of PHC re-engineering is a real community-based process. You have to talk to political leadership. You have to talk to officials in the municipality. You have to talk to other prominent figures. You know we even went to the ministers of different religions. So you really have to be as participative with the community as possible. If you don’t then you miss out completely”* (Senior District Official, GP). In the North West Province, “community dialogues”, involving a wide cross section of players, were a key part of the implementation process and established community participation and inter-sectoral action as valued elements of the strategy. *“The implementation dialogues must be carried out for the community to be aware of what is going to happen and they must accept because if they don’t that will cause us unnecessary challenges.”* (Outreach Team Leader, NWP) Similarly, in the Western Cape, community members interviewed welcomed a re-organisation of roles but emphasized the need for greater participation. *“Communities ... can play a big role in if they*

*were educated about the new vision and have knowledge about the new system.”* (Community member, WC). None of the three provinces had considered formal community oversight roles, such as through clinic committees, of outreach teams.

Despite emerging from an NGO-driven system, the WBOT strategy is silent on the role of NGOs, and several provinces have opted to do away with NGO intermediaries and contract directly with individual CHWs. While some NGOs may disappear others will continue to have a community presence and will form part of the array of local actors to be engaged in community health systems. Where NGOs remain as contracted agents deploying CHWs, such as in the Western Cape, their organisational relationships also have to be redefined. An NGO partnership system requires capacity for managing contractual relationships that includes not only financial accounting and performance monitoring but also the trust relationships necessary for effective cooperation in a plural environment. The Western Cape situation appraisal recommended that contracting of NGOs shift to sub-district authorities, away from the more remote and disconnected District Community Based Services division, as in the past. This will also allow for greater priority setting and planning at this level.

#### *Development of new systems*

Following the publication of the PHC Re-engineering Discussion Document (which spelt out the core concept of the team approach and roles), the national Department of Health commissioned an inter-related set of processes that included the design of a national work-based training curriculum (through a national accrediting body), indicators and a routine reporting system through the District Health System, and the development of in-service training packages.

These elements formed the leading edge of reorganised community based services in the provinces and their alignment facilitated implementation, where this was observed in North West and Sedibeng. However, several key human resource and related financing questions remained unresolved at national level, and were thus implicitly delegated to provincial players. These included the employment status and remuneration of CHWs, the roles of NGOs, and the mobilisation and funding of nursing personnel as team leaders.



In a process emulating other provinces (begun in KwaZulu-Natal, a province not studied), both Gauteng and North West decided to move away from payment of monthly CHW stipends through NGOs, experienced as unreliable and frequently interrupted, to direct payments through the government payroll. As indicated, the Western Cape chose to remain with the NGO contracting system that functioned relatively well in this province. However, without the additional funding nationally, the levels of stipends were not increased and remained well below the entry level wage in the civil service. The Western Cape case study documented a very high turnover of CHWs, especially in the urban areas as a result [29], and retention and stability of WBOTs remains a key issue.

In the North West, which has scaled up WBOTs despite the absence of additional funding, the strategy was integrated into existing district and sub-district resource allocation, planning and monitoring mechanisms. As a senior provincial manager indicated, *“districts were being encouraged to “work differently” within the PHC re-engineering framework and obtain necessary budget accordingly.”* This was accepted at lower levels: *“If it’s part of our mandate, then it’s in the equitable share [core budget]. It’s a good thing because we will own it 100% and we’ll plan and implement it accordingly.”* (PHC Facility Supervisor) In Gauteng, the provincial government provided budgets to Districts to recruit retired nurses to support teams. However, the health post component continued to rely on local resource mobilization: *“We also had to ask for donations, because it was a mandate but it was an unfunded mandate. So they said we should ask for donations from business people or from wherever.”* (Sub-district manager, GP).

The design of integrated health system support systems is perhaps the best recognised of the leadership and governance roles in CHW programmes. However, while national policy processes provided the overall design and core idea of the WBOTs, these processes remained incomplete and had to undergo further development with implementation.

*Leading and managing change*

The North West Province provided the clearest example of the sub-national leadership required to catalyse changes to community-based services systematically and at scale. The primary case study [27] identified these as an inter-related set of processes that included:

- The forging of a collective vision for the new strategy that built on prior history and values and that led to distributed leadership and ownership of the new policy;
- An implementation strategy that ensured alignment of systems (information, human resources) and appropriate sequencing of activities (planning, training, piloting, household campaigns);
- The privileging of ‘community dialogues’ and local manager participation in the early phases;
- The establishment of special implementation structures: a PHC Task Team (chaired by a senior provincial manager) to enable feedback and ensure accountability, and an NGO partnership that provided flexible support for implementation.

In the North West, a rural province relatively shielded from the dominance of tertiary care centres and medical schools, the values of PHC (such as community participation and inter-sectoral action) have found ready acceptance. In the Western Cape, community based services are still regarded by providers and frontline managers as a clinical extension of care in clinics and hospitals. Those seeking to implement the values espoused in Healthcare 2030 thus face the challenge of both building political commitment and achieving consensus on a different orientation. In contrast to the North West where a collective vision and support was evident and an important driver of change, views on reforms to community-based services in the Western Cape were more fragmented. As one interviewee said, *“The problem is that it is such a wide concept and each person interprets the concept in their own way ... [they are] all on different pages. [I] don’t think management understands it or is fully in agreement on what it should be.”* (District Manager, WC). In Sedibeng (and in Gauteng more generally), the leadership role of family medicine specialists, linked to universities, has played a major role in legitimating new forms of community oriented PHC. However, these initiatives have tended to remain local and therefore uneven across the province.

All three provinces face the problem of national political ambiguity towards the WBOT Strategy. The strategy features in all the key overarching reform statements (notably

NHI), but is not backed by funding or developed yet as a specific policy. Despite the presence of routine information systems, monitoring and evaluation of WBOT implementation remains weak, and the demand for evidence is low.

A key problem is that implementing the WBOTs will require significant new investments, especially in the regularization of the employment of CHWs, but also in better support systems. In a middle-income country with a relatively well-developed and accessible facility-based PHC infrastructure, the added value of WBOTs will be in the preventive and promotive roles they can play. Opening up the fiscal space for this requires compelling evidence on the capacity of comprehensively oriented WBOTs to address disease burdens and the social determinants of health. Unfortunately, the evidence based from elsewhere, notably around the role of CHWs in child survival has limited applicability in South Africa. In the face of this, the focus has remained on disease specific community initiatives (notably HIV/TB), and on strategies to strengthen facility based services [31].

#### *Key leadership and governance roles*

In all three provinces the adoption of WBOTs strategy involved an active process of making sense of, adapting and negotiating the fit with existing provincial realities. Provincial stewards were also faced with reconfiguring relationships within PHC and the district health system, and developing new management systems. Further, if the strategy is to be sustained at scale, they have to make the case for greater investment, build an evidence base, forge partnerships and alliances, and design coherent implementation strategies.

From the cross case analysis, four key leadership and governance roles for sub-national stewards seeking to strengthen CHW programmes and community based services have been formulated:

1. Negotiating a fit between national mandates and provincial histories and strategies of community based services;
2. Defining new organisational and accountability relationships between CHWs, local health services, communities and NGOs;

3. Revising and developing new, aligned and integrated planning, human resource, financing and information systems;
4. Leading change by building new collective visions, mobilising political, including budgetary, commitment and designing implementation strategies.

These roles include not just the design of new systems – the “hardware” of governance, but also managing actor relationships and generating political support - the “software” of governance [30].

## Discussion

Leadership and governance, the “*oversight and guidance of the whole system to protect public interest*” [13] is a relatively poorly researched and understood role in health systems. This paper provides one perspective on this phenomenon, through the lens of sub-national health system stewards seeking to strengthen community-based services in South Africa. Secondary analysis of three provincial case studies of WBOT implementation, representing different contexts, attitudes and moments in the policy process, provided the opportunity for understanding the governance and leadership of CHW programmes at scale. The findings have relevance for other health systems, especially those in the process of restructuring existing community based delivery systems that emerged from responses to HIV/TB [31]. With their complex stakeholder relations, CHW programmes provide a window into the dynamics of leadership and governance in health systems more generally. The paper also speaks to the role of leadership and governance in implementation [15].

By focusing on provincial and district actors and processes the analysis, firstly, confirmed Hill and Hupe’s contention [16], of the distributed nature of the leadership and governance function. Policy development and design of programmes are not a once off national process following a pre-determined check-list, but a dynamic, negotiated and iterative process involving actors at all levels. National mandates are just the starting point, and may be incomplete or even contradictory. If they are to be implemented, these mandates need to find their fit, through negotiation and adaptation, in the messy and crowded everyday reality of health systems [32]. Strong sub-national governance, able to adapt national frameworks to local conditions, set priorities and coordinate and mobilise

local actors is thus key to ensuring sustained implementation of CHW programmes[33][34]. Such processes inevitably result in distinct sub-national programme realities where even fundamental orientations may be shaped and reshaped at the local level (e.g. whether CHWs are to be viewed as a technical agent or community mobiliser). This requires recognising the essentially emergent nature of CHW programmes [35] and the appropriate role of national (and international) support in the face of this [7].

Secondly, with respect to CHW programmes, attention needs to be paid to the micro-level reconfiguration of roles, responsibilities and accountabilities - between communities, CHWs, PHC professionals and sub-district management – and how these affect the distribution of decision making and power, and therefore, prospects for equity [36]. In particular, the analysis revealed the complex relationship between community and facility based players and the importance of mechanisms that ensure that community based teams have a degree of independence and autonomy from facilities. Two well known CHW initiatives, the Mitanin Programme in Chhattisgarh State, India [37] and the Health Surveillance Assistants Programme in Malawi [32] manage and deploy CHWs through divisions of the health system that are separate but coordinated with the rest of the PHC system. The creation of health posts in Sedibeng and NGO contracting mechanisms in the Western Cape are also ways of structuring autonomy.

Whatever the mechanisms, restructured relationships require greater vertical integration and accountability of community based services through the formal health system. Equally important is strengthening the less formal and horizontal mechanisms of coordination and accountability within community health systems. Being able to build norms of responsiveness and answerability between local players in the wider community health system, despite the absence of formal lines of accountability, is a key element of local CHW programme leadership and governance. It requires the capacity to shift from modes of command-and-control (managing up and down) that are the dominant cultures within frontline service provision towards new relationships across organizational boundaries based on networking, cooperation and reciprocity (managing out) [27].

Thirdly, the analysis highlighted the strategic management role - defined as the capacity to look outwards, inwards and ahead simultaneously [38] - of steering change at scale through complex health systems. This involves deliberate and participatory change

management processes, in which collectively held values and visions play an important part. It requires mobilizing political support, but also the management of a range of vertical and horizontal organisational relationships,[39] and an ability to learn-by-doing [38].

A limitation of the analysis is that it did not include a consideration of national leadership and governance. This would bring into focus the formal processes of policy development, resource mobilization and decision-making - the “constitutive” and “directive” governance [16] roles - required at this level. The paper also rests on the assumption of government as the main funder and initiator of community-based services. In many settings this is not necessarily the case, where government is just one agency amongst many, and where the governance reality may be very different to that described above [17]. Although all guided by the same overall purposes and involving common actors, the case studies varied in size and scope and were, in two instances, selected because of ease of access and prior knowledge and relationships.

## **Conclusion**

This analysis has contributed to an empirical understanding of leadership and governance functions in strengthening CHW programmes at scale. It highlighted the multifaceted, negotiated and distributed nature of these functions, spanning analytic, managerial, technical and political roles. It is beyond the scope of this paper to spell out the implications of the analysis for assessing or strengthening the leadership and governance of national CHW programmes. However, it does suggest the need for multilevel frameworks that provide both direction and flexibility, allowing for emergence and negotiation; and which combine the “hardware” of systems development with the “software” of change.

### **Abbreviations:**

CHW: community health worker; GP: Gauteng Province; HIV: human immunodeficiency virus; NHI: National Health Insurance; NGO: non-governmental organization; NWP: North West Province; PHC: Primary health care; TB: tuberculosis; WBOT: ward based outreach team; WC: Western Cape Province.

**Ethics approval and consent to participate**

The case studies received ethics approval from the Universities of Stellenbosch (Western Cape) and Cape Town (North West and Gauteng), respectively. The cross case analysis constituted secondary data analysis. Signed informed consent was obtained for all interviews conducted in the original case studies.

**Consent for publication**

Not applicable

**Availability of data and material**

Not applicable

**Competing interests**

The authors declare that they have no competing interests

**Funding**

The individual case studies were funded through a variety of mechanisms. The cross case analysis was supported in part by the Collaboration for Health System Analysis and Innovation (CHESAI), funded by the Canadian International Development and Resource Centre (IDRC).

**Authors' contributions**

HS led two of the case studies and the cross case analysis. NN led the third case study and read and approved the manuscript.

**Acknowledgements:**

Our co-authors of, and the research participants in, the individual case studies are acknowledged. The preparation of the paper benefitted from discussion at an April 2016 writing workshop organised by the Consortium for Health Systems Innovation and Analysis (CHESAI) to generate deeper Southern-led perspectives on health systems and governance issues, CHESAI is funded by a grant from the International Development Research Centre, Canada. The comments of Uta Lehmann, Arshima, Lucy Gilson and Di McIntyre are gratefully acknowledged.

## References

1. Perry H, Zulliger R, Rogers M. Community health workers in low-, middle-, and high-income countries: an overview of their history, recent evolution, and current effectiveness. *Annu. Rev. Public Health.* 2014;35:399–421.
2. Tulenko K, Mogedal S, Afzal MM, Frymus D, Oshin A, Pate M, et al. Community health workers for universal health-care coverage: from fragmentation to synergy. *Bull. World Health Organ.* 2013;91:847-852.
3. Dahn B, Woldemariam A, Perry H, Maeda A, von Glahn D, Panjabi R, et al. Strengthening Primary Health Care through Community Health Workers: Investment Case and Financing Recommendations. Geneva: Office of UN Secretary General's Special Envoy for Financing the Health Millennium Development Goals and for Malaria; 2015.
4. Macinko J, Harris MJ. Brazil's Family Health Strategy — Delivering Community-Based Primary Care in a Universal Health System. *N. Engl. J. Med.* 2015; 372:2177-2181.
5. Perry H, Crigler L, Hodgins S. Developing and Strengthening Community Health Worker Programs at Scale: A Reference Guide and Case Studies for Program Managers and Policy Makers. Baltimore: Maternal and Child Health Integrated Program, USAID; 2014.
6. Earth Institute. One Million Community Health Workers: Technical Task Force Report. New York: Earth Institute, Columbia University; 2011.
7. Bennett S, George A, Rodriguez D, Shearer J, Diallo B, Konate M, et al. Policy challenges facing integrated community case management in Sub-Saharan Africa. *Trop. Med. Int. Heal.* 2014;19:872–82.
8. Lehmann U, Sanders D. Community health workers: what do we know about them? The state of the evidence on programmes, activities, costs and impact on health outcomes of using health workers. Geneva & Cape Town: World Health Organization and University of the Western Cape; 2007.
9. Pallas SW, Minhas D, Perez-Escamilla R, Taylor L, Curry L, Bradley EH. Community health workers in low- and middle-income countries: what do we know about scaling up and sustainability? *Am. J. Public Health.* 2013;103:e74–82.
10. Naimoli JF, Frymus DE, Wuliji T, Franco LM, Newsome MH. A Community Health Worker 'logic model': towards a theory of enhanced performance in low- and middle-income countries. *Hum. Resour. Health.* 2014;12:56.



11. Schneider H, Lehmann U. From Community Health Workers to Community Health Systems : Time to Widen the Horizon ? *Health Systems Reform*. 2016;2:112–8.
12. McCord GC, Liu A, Singh P. Deployment of community health workers across rural sub-Saharan Africa: financial considerations and operational assumptions. *Bull. World Health Organ*. 2013;91:244–53B.
13. WHO. Everybody's Business: Strengthening Health Systems to Improve Health Outcomes: WHO's Framework for Action. Geneva: World Health Organization; 2007.
14. Brinkerhoff DW, Bossert TJ, Health governance: Principal-agent linkages and health system strengthening. *Health Policy Plan*. 2014; 29:685–693.
15. Kitson AL, Rycroft-Malone J, Harvey G, McCormack B, Seers K, Titchen A. Evaluating the successful implementation of evidence into practice using the PARIHS framework: theoretical and practical challenges. *Implement. Sci*. 2008; 3:1.
16. Hill M, Hupe P. Analysing policy processes as multiple governance: Accountability in social policy. *Policy Polit*. 2006;34:557–73.
17. Abimbola S, Negin J, Jan S, Martiniuk A. Towards people-centred health systems: a multi-level framework for analysing primary health care governance in low- and middle-income countries. *Health Policy Plan*. 2014;29 Suppl 2:ii29–39.
18. Lewin S, Lehmann U. Governing Large-Scale Community Health Worker Programs. In: Perry H, Crigler L, Hodgins S, editors. *Developing and Strengthening Community Health Worker Programs at Scale: A Reference Guide and Case Studies for Program Managers and Policy Makers*. Baltimore: Maternal and Child Health Integrated Program (MCHIP), USAID; 2014.
19. McLaren ZM, Ardington C, Leibbrandt M. Distance decay and persistent health care disparities in South Africa. *BMC Health Serv. Res*. 2014;14:541:1–9.
20. National Department of Health. *Re-engineering Primary Health Care in South Africa: Discussion Document*. Pretoria: NDOH; 2010.
21. National Department of Health. *National Health Insurance for South Africa*. (White Paper). Pretoria: NDOH; 2015.
22. Yin RK. *Case Study Research: Design and Methods*. Fifth. Los Angeles: Sage Publications, Inc; 2014.
23. van Olmen J, Criel B, van Damme W, et al. *Analysing Health System Dynamics: A Framework*. Antwerp, Belgium: Institute of Tropical Medicine, Antwerp; 2012.

24. Peters DH, Tran NT, Adam T. Implementation research in health: a practical guide. Geneva: Alliance for Health Policy & Systems Research; 2013.
25. Schneider H, English R, Tabana H, Padayachee T, Orgill M. Whole-system change: case study of factors facilitating early implementation of a primary health care reform in a South African province. *BMC Health Serv. Res.* 2014;14:609.
26. Nxumalo N, Choonara S. A Rapid Assessment of Ward-based PHC outreach teams in Gauteng Sedibeng District – Emfuleni sub-district. Johannesburg: Centre for Health Policy; 2014.
27. Schneider H, Schaay N, Dudley L, Goliath C, Qukula T. The challenges of reshaping disease specific and care oriented community based services towards comprehensive goals: a situation appraisal in the Western Cape Province, South Africa. *BMC Health Serv. Res.* 2015;15:436.
28. National Department of Health. An Investment Case for Ward Based Primary Health Care Outreach Teams: Draft Document, Pretoria: Department of Health, RSA; 2016
29. Walt G, Gilson L Reforming the health sector in developing countries: The central role of policy analysis. *Health Policy Plan.* 1994; 9(4):353–70.
30. Sheikh, K, Gilson L, Agyepong IA, Hanson K, Ssengooba F, Bennett S. Building the field of health policy and systems research: Framing the questions. *PLoS Med.* 2011; 8(8):e1001073.
31. Aantjes C, Quinlan T, Bunders, J. Integration of community home based care programmes within national primary health care revitalisation strategies in Ethiopia, Malawi, South-Africa and Zambia: a comparative assessment. *Global. Health.* 2014; 10:85.
32. Smith S, Deveridge A, Berman J, Negin J, Mwambene N, Chingaipe E, et al. Task-shifting and prioritization: a situational analysis examining the role and experiences of community health workers in Malawi. *Hum. Resour. Health.* 2014;12:24.
33. Mogedal S, Wynd S, Afzal MM. CHWs and UHC: A framework for partners' harmonised support. (Working Paper). Geneva: Global Health Workforce Alliance; 2013.
34. Sarriot E, Morrow M, Langston A, Weiss J, Landegger J, Tsuma L, et al. A causal loop analysis of the sustainability of integrated community case management in Rwanda. *Soc. Sci. Med.* 2015;131:147–55.

35. Paina L, Peters DH. Understanding pathways for scaling up health services through the lens of complex adaptive systems. *Health Policy Plan.* 2012; 27(5):365–73.
36. Lehmann U, Gilson L. Actor interfaces and practices of power in a community health worker programme: a South African study of unintended policy outcomes. *Health Policy Plan.* 2013;28:358–66.
37. Nambiar D, Sheikh K. How a Technical Agency Helped Scale Up Community Action in Health: An Exploratory Study in Chhattisgarh State, India. *Health System Reform*, 2016; 2(2):123–34.
38. Brinkerhoff D, Crosby B. *Managing Policy Reform. Concepts and Tools for Decision-Makers in Developing and Transitioning Countries.* Bloomfield, USA: Kumarian Press, Inc.; 2002.
39. Cleary SM, Molyneux S, Gilson L. Resources, attitudes and culture: An understanding of the factors that influence the functioning of accountability mechanisms in primary health care settings. *BMC Health Serv. Res.* 2013;13.

## **Chapter 5: Discussion, conclusions and recommendations**

This chapter summarises the contribution of the thesis, drawing together the key findings and insights from the papers. Taking this analysis and the roles outlined in the cross case analysis as the starting point, a generic multi-level governance and leadership framework for CHW programmes at scale is proposed. The chapter then discusses the assumptions underlying and limitations of the research conducted. The chapter concludes with a set of recommendations for the development of, and research on, national CHW programmes.

### **Contribution of the thesis**

While there is a growing body of guidance directed at national CHW initiatives, and research into specific system aspects (or building blocks) of programmes, there is still little contemporary empirical literature addressing the dynamics of policy adoption and implementation in national health systems, or that takes a macro or “whole system” perspective, on such programmes. There is even less available evidence on the governance and leadership of national CHW programmes, a concept and practice which remains opaque and “elusive ... to define, assess and operationalize” (Barbazza & Tello 2014:2).

This thesis contributes to thinking on the establishment and strengthening of national CHW programmes, with a focus on the roles of governance and leadership in these programmes. This task was approached through the case of South Africa, in particular, the sub-national implementation of the Primary Health Care Ward Based Outreach teams (WBOs), and from the candidate’s perspective, described as “embedded country researcher”. From these vantage points, the case studies in this thesis offer a number of insights that have relevance for national CHW programmes and for implementation and governance in health systems more generally.

### *Recognising path dependence*

The case studies show how community-based sectors evolve over long periods of time, driven by context-specific factors, which shape the conditions for future policy. In South Africa, the HIV epidemic drove the rapid development of a community-based health sector. The WBOT strategy, inspired by the example of the Brazilian Family Health Programme (with its own particular history), while also responding to pressures from within South Africa to regularise the community-based sector, has thus not been implemented on a blank slate. In seeking to fashion a comprehensive national CHW programme out of an organically developing, NGO, disease-specific and care delivery base, with its own tensions and contradictions, the implementation of the WBOT strategy has faced particular constraints and opportunities (Paper 2 (Schneider et al. 2015)). Recognising histories or “path dependence” is key to thinking about and planning scaling-up and system strengthening (Paina & Peters 2012). Bennett et al. (2014) have argued that global health interventions targeting the community-based health sector often fail to acknowledge these histories and the particular political and health system contexts in which they are implemented.

### *Bottom-up emergence*

The thesis also describes the diverse ways in which a national policy is assimilated and adopted at sub-national level, and how national directives meet bottom-up innovations or re-organisations at regional and local levels. In the language of complex adaptive systems, the three provincial community-based sectors demonstrated the property of “emergence” (Paina & Peters 2012) and “self organization” (Sarriot et al. 2016). In Paper 1 (Schneider & Lehmann, 2010:66), written prior to the formulation of the PHC Re-engineering Strategy, we described a plural community-based sector, concluding that “the diversity of forms and approaches to governance at sub-national level cannot be wished away in the short term. National policy initiatives seeking to create coherence by establishing one approach to lay work and flattening difference may have the unintended consequence of raising expectations without addressing underlying problems.”

The WBOT strategy, while elaborating a clear set of overall principles (comprehensive, integrated, population-oriented), appears to have enabled some degree of provincial and local diversity of approaches in the implementation phase. However, I have also argued (in the Introduction and in Paper 4 (Schneider & Nxumalo n.d.)) that this has resulted

principally from ambiguity and low budgetary commitment at a national level, rather than as a deliberate choice<sup>16</sup>. In other words, if the national government had mobilized significant new resources for the WBOT strategy, it is very possible that it would have assumed a more directive, top down approach to implementation.

This raises the important question of what the role of the national sphere in driving change through complex systems should be. Paina and Peters (2012:371) argue against “blueprint approaches commonly found in global health initiatives, with an emphasis on detailed initial planning and inflexible designs, [which] are not a good match for addressing the adaptive properties of dynamic pathways for expanding health services. These approaches have often created rapid, short-term change at the expense of building sustainable health systems ... and institutions in the long term.” An alternative to blueprints is to think of the leadership of change in complex systems as one of establishing “simple rules” (Plsek & Wilson 2001). Simple rules can be viewed in different ways: as the core parameters or values of policy (e.g. teams, population orientation, comprehensive roles) or alternatively, as the underlying mechanisms (e.g. frontline provider participation, building on prior histories) governing change processes. Either way, they enable flexibility and negotiated adaptation and assimilation through systems.

In reflecting on the early implementation of the WBOT strategy in the North West Province (Schneider et al. 2014), we drew on the idea of “simple rules” of whole system change and their application to PHC systems reform in Canada (Best et al. 2012). In the North West Province, these “rules” were identified as distributed leadership, alignment with commonly held values, involvement of frontline providers and communities, and feedback and accountability during implementation. A common vision and discourse appeared to provide a powerful directive for change across levels of the health system. We concluded that successful implementation through complex systems requires paying attention to both the “hardware” of planning and systems development, and the intangible “software” of deliberation, mindsets and collective visions. The latter has also been referred to as the “leadership of sensemaking” (Gilson et al. 2014). This would apply as much to the interface between national and provincial spheres as to the interface between provinces, districts and facilities.

---

<sup>16</sup> Failure to adequately resource the WBOT strategy is also reflected in the very uneven implementation of WBOTs across the country.

### *Distributed decision-making*

The thesis also documents the distributed nature of decision-making, and therefore governance and leadership of CHW programmes. Returning to Hill and Hupe's (2006) framework, the processes of “constitutive”, “directive” and “operational” governance are often assumed to correspond with administrative layers of government. For example, in a quasi-federal system such as South Africa, decision-making is premised on a linear and hierarchical process, where the national sphere decides the fundamental directions of policy (constitutive governance), the provincial sphere establishes the conditions facilitating implementation (directive governance), and districts manage implementation (operational governance). As suggested in the literature review, these assumptions also underpin the WHO's (2007) conception of governance as a set of “sub-functions” located principally at national level, focused on design, and in the hands of national ministries. This has influenced thinking on CHW programme governance and leadership globally (McCord et al. 2013; Naimoli et al. 2014).

However, the case studies confirmed Hill and Hupe's (2006) contention that all three forms of decision-making – constitutive, directive and operational – are present across layers of the system. The creation of health posts, an important innovation significantly shaping power relations between actors in Sedibeng District (Paper 4 (Schneider & Nxumalo n.d.)), could be viewed as shaping the “set of rules formal and informal that governs the behaviour of actors...”<sup>17</sup> (Caulfield & Hort 2012:1) at a local organisational level. Conversely, the national sphere's role in providing training to WBOTs in the initial phases of implementation was highly operational in nature. Provincial elaboration and reshaping of policy was significant, resulting in the very diverse programme realities referred to earlier.

Table 11 below provides examples of how decision-making in the implementation of the WBOT strategy was distributed across layers of government in South Africa.

International influences were also present. Exposure to the Brazilian Family Health Programme shaped thinking in the PHC Re-engineering Strategy quite directly, and,

---

<sup>17</sup> Note the use of the word “rules” here, on how systems are constituted, has a broader meaning to the more specific use of the term “simple rules” earlier, denoting the leadership of change through complex health systems.

although not referenced in this thesis, global guidelines such as the “community IMCI (integrated management of childhood illness)” (WHO 2004) have been adapted for use in the country.

**Table 11: Distributed governance in South Africa’s WBOT strategy**

	Constitutive	Directive	Operational
Supra national/ Global	The role of the Brazilian Family Health Programme	Adopting global guidelines, strategies (e.g. cIMCI)	
National	Establishing the model of WBOTs and roles	Designing M&E systems	Running training
Provincial	Resisting or adopting policy Defining visions and values, roles of NGO sector	Developing financing & HR systems	Organising local dialogues
Local	Bottom-up innovation (e.g. health posts)	Defining local accountability arrangements	Appointing and managing teams

The implication of these findings is that strategies to define or strengthen the governance and leadership of national CHW programmes need to be both multilevel and deliberative. Recognising that the “rules of the game” are potentially created at all levels, multilevel governance entails “negotiated, non-hierarchical exchanges between institutions at the transnational, national, regional, and local levels” (Touati et al. 2015:2).

#### *New relationships with the local health system and communities*

The thesis also highlights the extent of micro-level reconfigurations required for the successful implementation and integration of CHW programmes, involving new practices of accountability and reporting, supervision and priority-setting in PHC and district health systems. However, integration cannot be regarded as a simple task of attaching teams to local health facilities. Underpinned by differences in perspective and uneven power relations, relationships between CHWs and the local health system are almost universally described as difficult (Schneider et al. 2008; Scott & Shanker 2010; Mishra 2014; Kok et al. 2015). There is the danger that CHWs become lowly players at the bottom of a health worker hierarchy, drawn into health facilities as an “extra pair of hands” (Walt et al. 1989). Significant mindset shifts amongst frontline health professionals and managers are required to prevent this and protect the independent role of CHWs in communities.



The cross case analysis concluded on the importance of CHW programme designs that allow some degree of autonomy in relation to facility-based players. There are several ways of achieving this:

- by structurally separating the management and employment/payment of CHWs from the rest of the PHC system, through a different division of the health system as in Malawi (Smith et al. 2014) or Chhattisgarh State, India (Nandi & Schneider 2014; Nambiar & Sheikh 2016), or through a system of NGO contracts as in the Western Cape (Schneider et al. 2015)<sup>18</sup>;
- through the appointment of professionals into community-based teams, such as nurses in South Africa and doctors and dentists in Brazil, where these act as buffers and ensure some evening out of power relations;
- by providing independent physical locations for community-based teams to convene, such as the health posts in Sedibeng District;
- by developing mechanisms of community oversight by and peer support to CHWs (Mkumbo et al. 2014).

The local governance of CHW programmes is made complex by the fact that these programmes exist not just at the interface of the formal health system but also with communities (Lewin & Lehmann 2014). Of the two key interfaces, the relationship with and embedding in communities is the most poorly understood (Naimoli et al. 2014). Community contexts of CHW programmes are insufficiently characterised (Kane et al. 2010; Glenton et al. 2011), and the many other players who CHWs engage in communities, such as informal volunteers, religious structures and local politicians, often remain invisible (Leon et al. 2015).

A commentary written during the course of this PhD (Schneider & Lehmann 2016) argued for a more explicit focus on the network of community-based actors surrounding CHWs in what we refer to as the *community health system*. This is especially important for initiatives, such as the WBOTs, that seek to shift from limited care roles in referral

---

<sup>18</sup> An older example is that of the CHW programme in Brazil, which was first introduced in Ceara State by the new state government in parallel to, rather than through, a municipal system considered corrupt and ineffective. In by-passing local authorities and tactically intervening directly in communities, the state forged a new set of values in local health services, which in turn influenced the functioning of municipal services (Tendler & Freedheim 1994).

arrangements to comprehensive and population-based approaches. In the commentary, we defined the community health system as the context-specific set of local actors, relationships and processes engaged in producing, advocating for and supporting health in communities and households outside of, but existing in relationship to, formal health structures. They include other health care providers, organisational intermediaries, other sectors and local representative structures. These actors, their relationships (“social capital”), and the local social norms and power structures surrounding them may be key to the success of CHW programmes, and need to be understood and engaged.

Further, community health systems are not formal bureaucracies with vertical lines of command-and-control, but social systems that contain both hierarchical and “horizontal” elements based on networking and reciprocity, and relying on trust and acceptability. This, in turn, has implications for formal system players seeking to intervene in the community health system, who often start from the premise of command-and-control and are poorly prepared to work in a collaborative, networking mode of relationship (Mishra 2014).

#### *Whole system perspective*

Finally, the thesis has sought to show the role and relevance of a macro or “whole systems” perspective on CHW programmes at scale – simultaneously considering the “what” and the “how”, the current conditions and future vision, the hardware of new systems, and the software of visions, relationships and strategy. This was applied most explicitly in the situation appraisal in the Western Cape (Paper 2 (Schneider et al. 2015)).

As indicated in the Introduction (Chapter 1), this is especially important for health system managers who have to hold such “360 degree” perspectives when designing or implementing policy<sup>19</sup>. A macro- and meso-level HPSR perspective is also required if we are to understand phenomena such as governance and leadership, or why some districts, regions, or whole health systems perform better than others over time (Balabanova et al. 2013). Conceptual frameworks such as WHO’s building blocks (Paper 2 (Schneider et al. 2015)), tools of policy analysis (George et al. 2015) and from systems thinking (Sarriot et

---

<sup>19</sup> See for example the perspectives of local managers in the following blog: <http://www.hpsa-africa.org/index.php/what-s-new-in-hpsr/hpsr-blog/111-chepsaa-s-course-on-complex-health-systems-initiated-in-kilifi-kenya-adaptations-to-make-it-contextually-relevant-and-lessons-learnt-during-teaching>

al. 2015) offer approaches to analysing CHW programmes. Others have developed quantitative, indicator-based methodologies for holistic country assessments (Kuruvilla et al. 2014). However, conducting whole system analyses is not straightforward. It requires working with multiple narratives and sources of data to construct a coherent storyline, to surface underlying mechanisms and describe the intangible. Methodologies such as case study (Yin 2014) and theory-based evaluation (Marchal et al. 2010) offer approaches for the conduct of such research, with deliberate strategies for ensuring rigour and the building of middle-range theory. Ultimately, whatever the approach, it is a highly interpretive act, relying on plausibility and sense-making rather than statistical probability.

### **A multilevel framework for the governance and leadership of national CHW programmes**

The cross case analysis in Paper 4 (Schneider & Nxumalo n.d.) identified four key governance and leadership roles at sub-national level:

1. Negotiating a fit between national mandates and provincial histories and strategies of community-based services;
2. Defining new organisational and accountability relationships between CHWs, local health services, communities and NGOs;
3. Developing new, aligned and integrated planning, human resource, financing and information systems;
4. Leading change by building new collective visions, mobilising political, including budgetary, commitment, and managing change processes.

Taking these four roles (referred to as dimensions) and drawing on a combination of 1) the specific findings of the case studies, 2) the above analysis, and 3) WHO's leadership and governance sub-functions, Table 12 below proposes a generic multilevel framework for the governance and leadership of national CHW programmes. It divides the four roles (referred to as dimensions) into fifteen specific roles, distributed across national, regional (provincial) and local (district) spheres.

The first dimension of governance and leadership is concerned with the design of CHW programmes, a process that looks both backwards and forwards – backwards in finding

the fit between international evidence and prior national and sub-national histories, needs and strategies, and forwards in assessing organisational capacity, actor readiness and public acceptance for change. It is also presented as a negotiated process of accommodation between actors at different levels of the system, where top-down mandates can meet bottom-up innovation and problem solving.

The second dimension addresses the reconfiguration of local organisational and accountability relationships. It highlights the importance of local programme structures that enable some degree of autonomy on the part of CHWs and which promote their engagement in the community health system. Following Brinkerhoff's (2004) typology, three components of accountability are proposed for CHW programmes: performance, financial and community. They combine mechanisms of vertical accountability through hierarchies with horizontal accountability between players in the community health system, based on responsiveness and collaboration.

The third dimension involves the development of new systems – planning, priority setting, human resource (including training), monitoring and evaluation (M&E), and referral. These systems need to be aligned with each other and also integrated into the health system.

The final dimension focuses on the leadership of change through shared visions, distributed ownership, participatory approaches which engage frontline actors, and feedback and learning. A key challenge in many settings is sustaining political support for CHW programmes. This is enabled by the generation of evidence from well-evaluated experiments in real-life local settings, monitoring impacts at scale, and the development of “investment cases” (outlining costs and benefits). It also requires a strategic and tactical ability to build alliances, recognising and making use of political windows of opportunity.

While the specific roles are presented as discrete elements in the four categories, there are overlaps and connections between them. For example, the analytic focus of the first two sub-functions would feed into the strategic management roles of developing shared visions further down in the framework; managerial systems of accountability and sharing of information link closely to the technical processes of designing effective M&E

systems and establishing costs and benefits with ensuring fair remuneration.

All functions are distributed across levels, recognising the contingent, context-specific and evolving nature of needs and strategies, and avoiding one-size-fits-all approaches. In general, however, the framework suggests different emphases (denoted by degree of shading) in the distribution of roles across spheres. Priority setting and planning is emphasised as a district level function, while aspects such as vision building and political and resource mobilisation are primarily roles of the centre (national sphere). Policy is presented as the outcome of negotiation between international evidence, and regional and local history and practice. As they often need to engage national regulatory processes, employment regimes and the design of accredited training programmes are proposed as a central function.

How can the framework be used? The framework serves as a heuristic device illustrating the balance of analytic, technical, managerial and political roles required in practice and their distributed nature. It can be used as an instrument to analyse and assess the governance of CHW programmes across levels of the system, and to design implementation strategies. It can also provide the basis for training and capacity development in the governance and leadership of CHW programmes at scale.

Further steps in the development of the framework would include testing its value and validity as a tool for planning, mapping and prospectively monitoring the governance and leadership of CHW programmes; and elaborating its components into curricula for continuing education and work-based learning.

**Table 12: A multilevel framework for the governance and leadership of national CHW programmes\***

Dimension	Specific roles		National	Provincial/ Regional	District/ Local
Negotiating a fit between evidence, histories and strategies of community based services and policy mandates	1	Negotiating a fit between the international evidence, national policy and provincial/regional and district/local history and practice in CHW programme roles and design;			
	2	Assessing strengths and weaknesses of current system, organisational readiness for change and public acceptability;			
Defining new organisational and accountability relationships between CHWs, local health services, communities and NGOs	3	Re-defining the roles of NGOs, communities and other elements of the PHC system, whilst ensuring community-based services retain the autonomy and power to act;			
	4	Building collaborations and coordinating with other actors in the community health system, and supporting inter-sectoral action on the local social determinants of health;			
	5	Ensuring systems for performance, financial and community accountability;			
Developing new, aligned and integrated planning, human resource, information and financing systems	6	Establishing local capacity for priority setting, planning, contracting and coordination;			
	7	Ensuring fair CHW remuneration and incentive based systems;			
	8	Ensuring supportive supervision, referral and communication systems through the PHC system;			
	9	Establishing accredited basic and in-service training aligned to roles;			
	10	Designing an effective M&E system;			
Leading change by building new collective visions, mobilising political support and managing change processes	11	Developing a vision that is collectively owned;			
	12	Developing change management strategies with participation and feedback mechanisms based on transparency and sharing of information;			
	13	Promoting well evaluated local experiments;			
	14	Modelling the costs of the strategy, against the benefits to be gained;			
	15	Mobilising political support and financing.			

\* shading denotes degree of relevance for that level: the darker the greater the relevance

## Assumptions and limitations

In generating lessons for the development and leadership of national CHW programmes, the framework (and the thesis as a whole) assumes that the ownership, oversight and ultimate regulatory control of CHW programmes lies with public health systems. This is the trend for large-scale national programmes, certainly in Africa (of which the programmes in Ethiopia, Rwanda and Malawi are examples). It also assumes integration into PHC and district health systems, which have a degree of decentralised decision-making. The analysis has less relevance for contexts where the state is a weak player, by choice or not, in shaping CHW initiatives, and where other governance agents may assume greater prominence (Abimbola et al. 2014). In Thailand, for example, a very large community-based sector relies almost entirely on civil society voluntarism, with a strong link to faith-based organisations (Treerutkuarkul 2008). In such settings, the focal point of governance may lie less with the state than with other institutions (political, religious) within the community health system.

The framework presented also assumes pre-existing programme structures at national and provincial levels, and is focused on new processes engaged by, rather than the establishment of or fundamental changes to these structures. Related to this, the conclusions reached on the governance and leadership of CHW programmes at scale draw on the analyses of policy processes at subnational level and did not include a case study of the national sphere. As discussed in Paper 4 (Schneider & Nxumalo n.d.), this would have brought to the fore the formal design aspects of CHW programmes, and may have resulted in a slightly different presentation of governance and leadership dimensions and roles in the framework. This limitation is mitigated by the candidate's participation in and knowledge of the national policy processes<sup>20</sup>, and the tacit knowledge gained through being a long-standing observer and researcher of the South African health system, including community-based systems.

The papers in the thesis started with a description of the evolution of lay health work and community-based systems written prior to the idea or formulation of the WBOT strategy.

---

<sup>20</sup> The candidate was a member of the Ministerial Task team that drafted the PHC Re-engineering Discussion Document.

The remaining three papers described the implementation of outreach teams *after* the strategy was defined. Although summarised in the introduction, the “missing middle” of agenda setting and policy formulation – the process by which the WBOT strategy was decided upon – was not formally studied or presented in the thesis. A closer examination of this period, and the multiple policy rationales at play – placating a vocal HIV sector and international pressure around the MDGs – may have provided clues to the subsequent implementation at sub-national level, and is a limitation of this thesis. It would have perhaps highlighted how policy statements give the appearance of political intent and rational planning, but may have other rationales arising from the “messier, real world of health politics” (George et al. 2015:ii3).

Finally, the cross case analysis brought together three case studies, while having common purposes, were different in many other respects – the research teams, the scope and depth of the investigation, range of methods used, and amounts of data generated. Two case studies took a whole provincial perspective while the third focused on one district. The PhD was constructed from these different research opportunities, as a form of “bricolage” and iterative reflection over time, held together through common perspectives and approaches, and by the candidate’s central role in all three case studies. This unevenness in the empirical data of this thesis can be regarded as a limitation.

## **Conclusions and recommendations**

National CHW programmes are complex interventions with system-wide effects, and are implemented in health systems which are themselves complex. A systems perspective to the design and implementation of CHW programmes recognises them as constituted of interconnected parts that have to function together to be effective, and that change and scale up are not easily programmable. This has implications for CHW programme strengthening and governance.

The governance and leadership of CHW programmes at scale can be understood as a distributed function, negotiated across levels of the health system and as encompassing analytic, managerial, technical and political roles and capabilities. These include being attentive to the prior history of community-based initiatives when implementing new



strategies; focusing on the technical elements of programmes, whilst also shaping their values, orientations and visions; and mobilizing alliances, resources and support. These processes embody more than the design of structures and policy, conducted as planning exercises by experts behind closed doors. They are dynamic and negotiated processes, requiring “learning-by-doing”, political acumen and “strategic flair” (Gilson & Schneider 2010; Kickbusch & Gleicher 2011).

Both the scholarship on, and strategies to strengthen, national CHW programmes need to thus address them as whole systems, opening up the “black box” of implementation and management of programmes, including the significant role of sub-national and local spheres in these processes. This thesis has provided empirical findings on the governance and leadership of national CHW programmes, further organising these findings into a framework that may offer lessons and guidance for other contexts. Going beyond CHW programmes, notions such as multilevel governance and the mix of roles and capabilities in this, can be applied to thinking about primary health care and district health system strengthening, programme implementation and processes of scaling up more generally (Scott et al. 2014; Gilson et al. 2014; Abimbola et al. 2014; Sarriot et al. 2016).

In taking forward a systems perspective on CHW programmes, several aspects require further research. They include:

- The interface between CHW programmes and local PHC systems, and how to ensure productive relationships between them, providing the necessary support and oversight, but also ensuring that CHWs retain their community identities and unique roles.
- Mapping of community health systems and how CHWs engage and harness this system; the role of collective capacity and community social norms in CHW programme performance; and the meanings and significance of community embeddedness in national CHW programmes.
- The local (district and sub-district) governance of CHW programmes, including systems of priority setting and planning, vertical and horizontal accountability, coordination, supervision and monitoring.
- The tensions and balances between top-down/national, and bottom-up/regional and local decision-making; between tailored/adaptive national approaches and defined

global guidance and strategies; and between elaborating detailed blue prints versus defining core principles/”simple rules” (Best et al. 2012)(Kuruvilla et al. 2014).

- Methodologies for prospective monitoring of national CHW programmes, which include measurable indicators as well as the less tangible dimensions such as the role of context specific adaptations, capacity for learning, emergence and self-organisation.

Turning specifically to strengthening the governance and leadership of the Ward Based Outreach Team Strategy in South Africa, specific next steps could include:

- Convening a national process of review, dialogue and reflection that draws together the now several years’ of experience from across the country with the implementation of WBOTs. This would enable learning, between implementers across the system, horizontally, and vertically, feeding into the policy process nationally;
- Instituting regular collation and reporting of routinely collected data on WBOTs (including in the publicly available annual District Health Barometer). This will draw attention to the strategy, provide feedback and promote accountability and the local use of information;
- Based on the above processes, developing an “Investment Case” (Dahn et al. 2015) to mobilise resources and national political commitment for greater funding of WBOTs. As resources are mobilised, however, the centre needs to avoid shifting from a *laissez faire* to an excessively command-and-control approach;
- Formalising the status of CHWs as a cadre, addressing their training/certification, remuneration and career paths;
- Developing frameworks, guidance and induction for sub-district and district level managers in priority setting, planning, monitoring and supporting WBOTs, including strengthening the relationship between outreach teams and primary health care facilities;
- Defining and funding a research agenda on WBOTs that includes operations research (e.g. on supportive supervision, work organization, inter-sectoral collaboration) and impact evaluations.

## References

- Aantjes, C., Quinlan, T. & Bunders, J., 2014. Integration of community home based care programmes within national primary health care revitalisation strategies in Ethiopia, Malawi, South-Africa and Zambia: a comparative assessment. *Globalization & Health*, 10:85.
- Abbott, L. & Luke, N., 2011. Local hierarchies and distributor (non) compliance: a case study of community-based distribution in rural north India. *Health Care For Women International*, 32(3), pp.225–242.
- Abimbola, S., Negin, S., Jan, S. & Martinuik, A., 2014. Towards people-centred health systems: a multi-level framework for analysing primary health care governance in low- and middle-income countries. *Health Policy and Planning*, 29 (Suppl 2), pp.ii29–39.
- Aghajanian, A. Mehryar, A.H., Ahmandia, S. & Kazemipour, S., 2007. Impact of rural health development programme in the Islamic Republic of Iran on rural-urban disparities in health indicators. *Eastern Mediterranean Health Journal*, 13(6), pp.1466–1475.
- AHPSR, 2008. *Neglected Health Systems Research : Governance and Accountability*, Geneva: Alliance for Health Policy and Systems Research, WHO.
- Akintola, O., 2010. Perceptions of rewards among volunteer caregivers of people living with AIDS working in faith-based organizations in South Africa: a qualitative study. *Journal of the International AIDS Society*, 13:22.
- Alam, K. & Oliveras, E., 2014. Retention of female volunteer community health workers in Dhaka urban slums: a prospective cohort study. *Human Resources for Health*, 12:29.
- Amouzou, A., Kanyuka, M., Hazel, E., et al., 2016. Independent Evaluation of the integrated Community Case Management of Childhood Illness Strategy in Malawi Using a National Evaluation Platform Design. *The American Journal of Tropical Medicine and Hygiene*, 94(3), pp.574–83.
- Atkins, S., Lewin, S., Jordaan, E. & Thorson, A., 2011. Lay health worker-supported tuberculosis treatment adherence in South Africa: an interrupted time series study. *International Journal for Tuberculosis and Lung Disease*, 15(1), pp.84–89.

- Balabanova, D. Mills, A., Conteh, L. et al., 2013. Good Health at Low Cost 25 years on: lessons for the future of health systems strengthening. *Lancet*, 381(9883), pp.2118–33.
- Banteyerga, H., 2011. Ethiopia's health extension program: improving health through community involvement. *MEDICC Review*, 13(3), pp.46–49.
- Barbazzza, E. & Tello, J.E., 2014. A review of health governance: Definitions, dimensions and tools to govern. *Health Policy*, 116(1), pp.1–11.
- Bennett, S., George, A., Rodriguez, D., et al., 2014. Policy challenges facing integrated community case management in Sub-Saharan Africa. *Tropical Medicine & International Health*, 19(7), pp.872–882.
- Berman, P.A., Gwatkin, D.R. & Burger, S.E., 1987. Community-based health workers: head start or false start towards health for all? *Social Science and Medicine*, 25, pp.443–459.
- Best, A., Greenhalgh, T., Lewis, S., Saul, J.E., Carroll, S. & Bitz, J., 2012. Large-system transformation in health care: A realist review. *Milbank Quarterly*, 90(3), pp.421–456.
- Bhutta, Z.A., Lassi, Z., Pariyo, G. & Huicho, L., 2010. Global Experience of Community Health Workers for Delivery of Health Related Millennium Development Goals: A Systematic Review, Country Case Studies, and Recommendations for Integration into National Health Systems, Geneva, Switzerland: Global Health Workforce Alliance, World Health Organization.
- Binka, F.N., Bawah, A.A., Phillips, J.F., Hodgson, A., Adjuik, M. MacLeod, B., 2007. Rapid achievement of the child survival millennium development goal: evidence from the Navrongo experiment in Northern Ghana. *Tropical Medicine & International Health*, 12(5), pp.578–593.
- Braun, R., Catalani, C., Wimbush, J. & Israelski, D. 2013. Community health workers and mobile technology: a systematic review of the literature. *PLoS ONE*, 8(6):e65772.
- Brinkerhoff, D.W., 2004. Accountability and health systems: Toward conceptual clarity and policy relevance. *Health Policy and Planning*, 19(6), pp.371–379.
- Brinkerhoff, D.W. & Bossert, T.J., 2014. Health governance: Principal-agent linkages and health system strengthening. *Health Policy and Planning*, 29(6), pp.685–693.

Campbell, C. & Scott, K., 2011. Retreat from Alma Ata? The WHO's report on Task Shifting to community health workers for AIDS care in poor countries. *Global Public Health*, 6(2), pp.125–138.

Campbell, J., Kesetebirhan, A., Soucat, A. & Tlou, S., 2015. Maximizing the impact of community-based practitioners in the quest for universal health coverage. *Bulletin of the World Health Organization*, 93(9), p.590A.

Caulfield, T. & Hort, K., 2012. Governance and stewardship in mixed health systems in low- and middle- income countries (Working Paper), Melbourne: The Nossal Institute for Global Health, University of Melbourne.

Celletti, F., Wright, A., Palen, J., et al., 2010. Can the deployment of community health workers for the delivery of HIV services represent an effective and sustainable response to health workforce shortages? Results of a multicountry study. *AIDS*, 24 (Suppl 1), pp.S45–S57.

Chandani, Y., Noel, M., Pomeroy, A., Anderson, S. Pahl, M.K. & Williams, T., 2012. Factors affecting availability of essential medicines among community health workers in Ethiopia, Malawi, and Rwanda: solving the last mile puzzle. *American Journal of Tropical Medicine and Hygiene*, 87(Suppl 5), pp.120–126.

Christopher, J.B., Le May, A., Lewin, S., Ross, D.A., 2011. Thirty years after Alma-Ata: a systematic review of the impact of community health workers delivering curative interventions against malaria, pneumonia and diarrhoea on child mortality and morbidity in sub-Saharan Africa. *Human Resources for Health*, 9:27.

Clarke, M., Dick, J. Zwarenstein, M., Lombard, C.J., & Diwan, V.K., 2005. Lay health worker intervention with choice of DOT superior to standard TB care for farm dwellers in South Africa: a cluster randomised control trial. *The International Journal Of Tuberculosis And Lung Disease*, 9(6), pp.673–679.

Cleary, S.M., Molyneux, S. & Gilson, L., 2013. Resources, attitudes and culture: An understanding of the factors that influence the functioning of accountability mechanisms in primary health care settings. *BMC Health Services Research*, 13:320.

Collins, D., Jarrah, Z., Gilmartin, C., Saya, U., 2014. The costs of integrated community case management (iCCM) programs: A multi-country analysis. *Journal of Global Health*, 4(2):020407.

Condo, J., Mugeni, C., Naughton, B., et al., 2014. Rwanda's evolving community health worker system: a qualitative assessment of client and provider perspectives. *Human Resources for Health*, 12:71.

Dahn, B., Woldemariam, A., Perry, H., Maeda, A., von Glahn, D., Panjabi, R., et al., 2015. Strengthening Primary Health Care through Community Health Workers: Investment Case and Financing Recommendations, Geneva: Office of UN Secretary General's Special Envoy for Financing the Health Millennium Development Goals and for Malaria.

Dalglish, S.L., George, A., Shearer, J.C. & Bennett, S., 2015. Epistemic communities in global health and the development of child survival policy : a case study of iCCM. *Health Policy and Planning*, 30(Suppl 2), pp.ii12–ii25.

De Savigny, D. & Adam, T., 2009. Systems thinking for health systems strengthening, Geneva, Switzerland: Alliance for Health Policy and Systems Research, WHO.

de Wet, K., 2011. Redefining volunteerism: the rhetoric of community home-based care in (the not so new) South Africa. *Community Development Journal*, 47(1), pp.111–125.

Doherty, T.M. & Coetzee, M., 2005. Community Health Workers and Professional Nurses: Defining the Roles and Understanding the Relationships. *Public Health Nursing*, 22(4), pp.360–365.

Dollar, D. & Pritchett, L., 1998. *Assessing Aid. What Works, What Doesn't and Why*, New York: World Bank, Oxford University Press.

Earth Institute, 2011. *One Million Community Health Workers: Technical Task Force Report*, New York: Earth Institute, Columbia University.

El Arifeen, S., Christou, A., Riechenbach, L., et al., 2013. Community-based approaches and partnerships: innovations in health-service delivery in Bangladesh. *Lancet*, 382(9909), pp.2012–2026.

- Feldhaus, I., Silverman, M., LeFevre, A.E., et al., 2015. Equally able, but unequally accepted: Gender differentials and experiences of community health volunteers promoting maternal, newborn, and child health in Morogoro Region, Tanzania. *International Journal for Equity in Health*, 14:70.
- Gaziano, T.A., Bertram, M., Tollman, S.M. & Hofman, K., 2014. Hypertension education and adherence in South Africa: a cost-effectiveness analysis of community health workers. *BMC Public Health*, 14:240.
- George, A., Rodriguez, D.C., Rasanathan, K., Brandes, N. & Bennett, S., 2015. ICCM policy analysis: Strategic contributions to understanding its character, design and scale up in sub-Saharan Africa. *Health Policy and Planning*, 30(Suppl 2), pp.ii3–ii11.
- Gilson, L. & Raphaely, N., 2008. The terrain of health policy analysis in low and middle income countries: A review of published literature 1994-2007. *Health Policy and Planning*, 23(5), pp.294–307.
- Gilson, L. & Schneider, H., 2010. Commentary: Managing scaling up: What are the key issues? *Health Policy and Planning*, 25(2), pp.97–98.
- Gilson, L., Walt, G., Heggenhougen, K., et al., 1989. National community health worker programs: how can they be strengthened? *Journal of Public Health Policy*, 10(4), pp.518–532.
- Gilson, L., 2012. *Health Policy and Systems Research: A Methodology Reader* L. Gilson, ed., Geneva, Switzerland: Alliance for Health Policy and Systems Research/World Health Organization.
- Gilson, L., Elloker, S., Olckers, P. & Lehmann, U., 2014. Advancing the application of systems thinking in health: South African examples of a leadership of sensemaking for primary health care. *Health Research Policy and Systems*, 12:30.
- Gilson, L., 2016. Everyday Politics and the Leadership of Health Policy Implementation. *Health Systems & Reform*, 2(3), pp.187–193.
- Giugliani, C., Harzheim, E., Duncan, M.S. & Duncan, B.B., 2011. Effectiveness of community health workers in Brazil: a systematic review. *The Journal of Ambulatory Care Management*, 34(4), pp.326–338.

Glenton, C., Lewin, S. & Scheel, I.B., 2011. Still too little qualitative research to shed light on results from reviews of effectiveness trials: a case study of a Cochrane review on the use of lay health workers. *Implementation Science*, 6:53.

Greenhalgh, T., Robert, G. Macfralan, F., Bate, P. & Kyriakidou., 2004. Diffusion of Innovations in Service Organizations: Systematic Review and Recommendations. *The Milbank Quarterly*, 82(4), pp.581–629.

Grimwood, A., Fatti, G., Mothibi, E., Malahlela, M., Shea, J. & Eley, B., 2012. Community adherence support improves programme retention in children on antiretroviral treatment: a multicentre cohort study in South Africa. *Journal of the International AIDS Society*, 15:17381.

Haines, A., Sanders, D., Lehmann, U., et al., 2007. Achieving child survival goals: potential contribution of community health workers. *Lancet*, 369(9579), pp.2121–2131.

Hermann, K., van Damme, W., Pariyo, G., et al., 2009. Community health workers for ART in sub-Saharan Africa: learning from experience - capitalizing on new opportunities. *Human Resources for Health*, 7:31.

Heunis, C., Wouters, E., Kigozi, G., Janse van Rensburg, E. & Jacobs, N., 2013. TB/HIV-related training, knowledge and attitudes of community health workers in the Free State province, South Africa. *African Journal of AIDS Research*, 12(2), pp.113–119.

Hill, M. & Hupe, P., 2006. Analysing policy processes as multiple governance: Accountability in social policy. *Policy and Politics*, 34(3), pp.557–573.

Hill, Z., Dumbaugh, M., Benton, L., et al., 2014. Supervising community health workers in low-income countries - a review of impact and implementation issues. *Global Health Action*, 7:24085.

Hoodfar, H., 2010. Health as a context for social and gender activism: Female volunteer health workers in Iran. *Population and Development Review*, 36(3), pp.487–510.

Hung, K.J., Tomlinson, M., le Roux, I.M., Dewing, S., Chopra, M. & Tsai, A., 2014. Community-based prenatal screening for postpartum depression in a South African township. *International Journal of Gynaecology and Obstetrics*, 126(1), pp.74–77.



Jaskiewicz, W. & Tulenko, K., 2012. Increasing community health worker productivity and effectiveness: a review of the influence of the work environment. *Human Resources for Health*, 10:38.

Källander, K., Strachan, D., Soremekun, S., Hill, Z., Lingam, R. & Tibenderana, J., 2015. Evaluating the effect of innovative motivation and supervision approaches on community health worker performance and retention in Uganda and Mozambique : study protocol for a randomised controlled trial. *Trials*, 16:157.

Kane, S.S., Gerretsen, B., Scherpbier, R., Dal Poz, M. & Dieleman, M., 2010. A realist synthesis of randomised control trials involving use of community health workers for delivering child health interventions in low and middle income countries. *BMC Health Services Research*, 10:286.

Kasteng, F., Settumba, S., Kallander, K., Vassall, A., et al., 2016. Valuing the work of unpaid community health workers and exploring the incentives to volunteering in rural Africa. *Health Policy and Planning*, 31(2), pp.205–216.

Kickbusch, I. & Gleicher, D., 2011. Governance for health in the 21st century : a study conducted for the WHO Regional Office for Europe, Copenhagen, Denmark: World Health Organization Regional Office for Europe.

Kickbusch, I. & Szabo, M.M.C., 2014. A new governance space for health. *Global Health Action*, 7:23507.

Kok, M.C., Kea, Z.K, Datiko, D.G., et al., 2015. A qualitative assessment of health extension workers' relationships with the community and health sector in Ethiopia: opportunities for enhancing maternal health performance. *Human Resources for Health*, 13:80.

Kok, M.C., Ormel, H., Broerse, J.E.W., et al., 2016. Optimising the benefits of community health workers' unique position between communities and the health sector: A comparative analysis of factors shaping relationships in four countries. *Global Public Health*, Apr 30, pp.1–29 [Epub ahead of print].

Kuruvilla, S., Schweitzer, J., Bishai, D., et al., 2014. Success factors for reducing maternal and child mortality, *Bulletin of the World Health Organization*, 92, pp. 533-544.

- Larson, E., George, A., Morgan, R. & Poteat, T., 2016. 10 Best resources on . . . intersectionality with an emphasis on low-and middle-income countries. *Health Policy and Planning*, 31, pp.964–969.
- Lassi, H. & Bhutta, Z.A., 2010. Community-based intervention packages for reducing maternal and neonatal morbidity and mortality and improving neonatal outcomes (Review) Community-based intervention packages for reducing maternal and neonatal morbidity and mortality and improving neon. *Cochrane Database of Systematic Reviews*, 11:CD007754.
- Lehmann, U. & Gilson, L., 2013. Actor interfaces and practices of power in a community health worker programme: a South African study of unintended policy outcomes. *Health Policy and Planning*, 28(4), pp.358–366.
- Lehmann, U. & Sanders, D., 2007. Community health workers: what do we know about them? The state of the evidence on programmes, activities, costs and impact on health outcomes of using health workers, Geneva & Cape Town: World Health Organization & University of the Western Cape.
- Leon, N., Sanders, D., van Damme, W., et al., 2015. The role of ‘hidden’ community volunteers in community-based health service delivery platforms: examples from sub-Saharan Africa. *Global Health Action*, 8:27214.
- Lewin, S. & Lehmann, U., 2014. Governing Large-Scale Community Health Worker Programs. In H. Perry, L. Crigler, & S. Hodgins, eds. *Developing and Strengthening Community Health Worker Programs at Scale: A Reference Guide and Case Studies for Program Managers and Policy Makers*. Baltimore: Maternal and Child Health Integrated Program (MCHIP), USAID.
- Lewin, S., Munabi-Babigumira, S., Glenton, C., et al., 2010. Lay health workers in primary and community health care for maternal and child health and the management of infectious diseases. *Cochrane Database of Systematic Reviews*, 3: CD004015.
- Liu, A., Sullivan, S., Khan, M., Sachs, S. & Singh, P., 2011. Community Health Workers in Global Health: Scale and Scalability. *The Mount Sinai Journal of Medicine*, 78, pp.419–435.

- Ludwick, T., Brenner, J.L., Kyomuhangi, T., Wotton, K.A. & Kabakyenga, J.K., 2014. Poor retention does not have to be the rule: retention of volunteer community health workers in Uganda. *Health Policy and Planning*, 29, pp.388–395.
- Macgregor, H. & Bloom, G., 2016. Health Systems Research in a Complex and Rapidly Changing Context: Ethical Implications of Major Health Systems Change at Scale. *Developing World Bioethics*, 16(3), pp.158-167.
- Maes, K.C., Kohrt, B.A. & Closser, S., 2010. Culture, status and context in community health worker pay: pitfalls and opportunities for policy research. A commentary on Glenton et al. (2010). *Social Science and Medicine*, 71, pp.1375–1380.
- Mampe, T., Schneider, H. & Reagon, G., 2016. Effectiveness of ward based outreach teams in the North West Province: An Evaluation, Cape Town: School of Public Health, University of the Western Cape.
- Marchal, B., Westthorp, G., Wong, G., et al., 2013. Realist RCTs of complex interventions: An oxymoron. *Social Science and Medicine*, 94, pp.124–8.
- Marchal, B., Dedzo, M. & Kegels, G., 2010. Turning around an ailing district hospital : a realist evaluation of strategic changes at Ho Municipal Hospital (Ghana). *BMC Public Health*, 10:787.
- McCord, G.C., Liu, A. & Singh, P., 2013. Deployment of community health workers across rural sub-Saharan Africa: financial considerations and operational assumptions. *Bulletin of the World Health Organization*, 91(4), pp.244–53B.
- McGorman, L., Marsh D.R., Guenther, T., et al., 2012. A health systems approach to integrated community case management of childhood illness: methods and tools. *The American Journal of Tropical Medicine and Hygiene*, 87(Suppl 5), pp.69–76.
- McPake, B., Blaauw, D. & Sheaff, R., 2006. Health Systems Development Programme Recognising Patterns : Health Systems Research Beyond Controlled Trials, London: Health Systems Development Programme, London School of Hygiene & Tropical Medicine.
- McPake, B., Ijeoma, E., Witter, S., et al., 2015. Cost-effectiveness of community-based practitioner programmes in Ethiopia, Indonesia and Kenya. *Bulletin of the World Health Organization*, 93, pp.631–639A.

- Mikkelsen-Lopez, I., Wyss, K. & de Savigny, D., 2011. An approach to addressing governance from a health system framework perspective. *BMC International Health and Human Rights*, 11:13.
- Miles, R.E., 1978. The origin and meaning of Miles' Law. *Public Administration Review*, 38(5), pp.399–403.
- Milner, H.R., 2007. Race, culture, and researcher positionality: Working through dangers seen, unseen, and unforeseen. *Educational Researcher*, 36(7), pp.388–400.
- Mishra, A., 2014. 'Trust and teamwork matter': community health workers' experiences in integrated service delivery in India. *Global Public Health*, 9(8), pp.960–974.
- Mkumbo, E., Hanson, S., Penfold, S., Manzi, F., & Schellenberg, J., 2014. Innovation in supervision and support of community health workers for better newborn survival in southern Tanzania. *International health*, 6(4), pp.339–341.
- Mlotshwa, L., Harris, B., Schneider, H., et al., 2015. Exploring the perceptions and experiences of community health workers using role identity theory. *Global Health Action*, 8:28045.
- Mogedal, S., Wynd, S. & Afzal, M.M., 2013. *Community Health Workers and Universal Health Coverage: A framework for partners' harmonised support*, Geneva: Global Health Workforce Alliance, World Health Organization.
- Mounier-Jack, S., Griffiths, U.L., Closser, S., Burchett, H. & Marchal, B., 2014. Measuring the health systems impact of disease control programmes : a critical reflection on the WHO building blocks framework. *BMC Public Health*, 14:278.
- Mumtaz, Z., Salway, S., Nykiforuk, C., Bhatti, A., Ataullahjhan, & Ayyalasomayajula, B., 2013. The role of social geography on Lady Health Workers' mobility and effectiveness in Pakistan. *Social Science and Medicine*, 91, pp.48–57.
- Mutamba, B.B., van Ginneken, N., Paintain, L.S., Wandiembe, S., & Schellenberg, D., 2013. Roles and effectiveness of lay community health workers in the prevention of mental, neurological and substance use disorders in low and middle income countries: a systematic review. *BMC Health Services Research*, 13:412.

- Naidu, T., Sliep, Y. & Dageid, W., 2012. The social construction of identity in HIV/AIDS home-based care volunteers in rural KwaZulu-Natal, South Africa. *Journal of Social Aspects of HIV/AIDS Research Alliance*, 9(2), pp.113–126.
- Naimoli, J.F., Frymus, D.E., Quain, E.E & Roseman, E.L., 2012. Community and Formal Health System Support for Enhanced Community Health Worker Performance: A US Government Evidence Summit, Washington D.C.: USAID.
- Naimoli, J.F., Frymus, D.E., Wuliji, T., Franco, L.M. & Newsome, M.H., 2014. A Community Health Worker 'logic model': towards a theory of enhanced performance in low- and middle-income countries. *Human Resources for Health*, 12:56.
- Naimoli, J.F., Perry, H.B., Townsend, J.W., Frymus, D.E. & McCafferty, J.A., 2015. Strategic partnering to improve community health worker programming and performance: features of a community-health system integrated approach. *Human Resources for Health*, 13:46.
- Nambiar, D. & Sheikh, K., 2016. How a Technical Agency Helped Scale Up Community Action in Health: An Exploratory Study in Chhattisgarh State, India. *Health Systems & Reform*, 2(2), pp.123–134.
- Nandi, S. & Schneider, H., 2014. Addressing the social determinants of health: a case study from the Mitanin (community health worker) programme in India. *Health Policy and Planning*, 29(Suppl 2), pp.ii71–ii81.
- Nanyonjo, A., Nakirunda, M., Makumbi, F., Tomson, G., Kallander, K., et al., 2012. Community acceptability and adoption of integrated community case management in Uganda. *American Journal of Tropical Medicine and Hygiene*, 87(5), pp.97–104.
- National Department of Health, 2010. Re-engineering Primary Health Care in South Africa: Discussion Document, Pretoria: Department of Health RSA.
- National Department of Health, 2011a. CHW Audit Report (Draft 1), Pretoria: Department of Health RSA.
- National Department of Health, 2011b. Ward Based Outreach Teams. Implementation Toolkit, Pretoria: Department of Health RSA.

- National Department of Health, 2015. National Health Insurance for South Africa (White Paper), Pretoria: Department of Health RSA.
- National Department of Health, 2016. An Investment Case for Ward Based Primary Health Care Outreach Teams: Draft Document, Pretoria: Department of Health RSA.
- Nefdt, R., Ribaira, E. & Diallo, K., 2014. Costing commodity and human resource needs for integrated community case management in the differing community health strategies of Ethiopia, Kenya and Zambia. *Ethiopian Medical Journal*, 52(Suppl 3), pp.137–149.
- Neupane, S., Odendaal, W., Friedman, I., Jassat, W., Schneider, H. & Doherty., 2014. Comparing a paper based monitoring and evaluation system to a mHealth system to support the national community health worker programme, South Africa: an evaluation. *BMC Medical Informatics and Decision Making*, 14:69.
- Nxumalo, N., Goudge, J. & Thomas, L., 2013. Outreach services to improve access to health care in South Africa: lessons from three community health worker programmes. *Global Health Action*, 6:19283.
- Nyonator, F.K., Awoonor-Williams, J.K., Phillips, J., Jones, T.C. & Miller., 2005. The Ghana community-based health planning and services initiative for scaling up service delivery innovation. *Health Policy and Planning*, 20(1), pp.25–34.
- Ogden, J., Esim, S. & Grown, C., 2006. Expanding the care continuum for HIV/AIDS: bringing carers into focus. *Health Policy and Planning*, 21(5), pp.333–42.
- Paina, L. & Peters, D.H., 2012. Understanding pathways for scaling up health services through the lens of complex adaptive systems. *Health Policy and Planning*, 27(5), pp.365–373.
- Pawson, R. & Tilley, N., 2004. *Realist Evaluation*, London: Sage Publications.
- Perry, H. & Zulliger, R., 2012. How Effective are Community Health workers? An Overview of Current Evidence with Recommendations for Strengthening Community Health Worker Programs to accelerate Progress in Achieving the Health-related Millennium Development Goals, Baltimore: Johns Hopkins Bloomberg School of Public Health.

Perry, H., Crigler, L. & Hodgins, S., 2014(a). Developing and Strengthening Community Health Worker Programs at Scale: A Reference Guide and Case Studies for Program Managers and Policy Makers, Baltimore: Maternal and Child Health Integrated Program (MCHIP), USAID.

Perry, H., Zulliger, R. & Rogers, M., 2014(b). Community health workers in low-, middle-, and high-income countries: an overview of their history, recent evolution, and current effectiveness. *Annual Review of Public Health*, 35, pp.399–421.

Petersen, I., Bhana, A. & Baillie, K., 2012. The feasibility of adapted group-based interpersonal therapy (IPT) for the treatment of depression by community health workers within the context of task shifting in South Africa. *Community Mental Health Journal*, 48(3), pp.336–341.

Pham, M.T., Rajic, A., Greig, J.D., Sargeant, J.M., Papadopoulos, A. & McEwen, S.A., 2014. A scoping review of scoping reviews: advancing the approach and enhancing the consistency. *Research Synthesis Methods*, 5, pp.371–385.

Pillay, Y. & Barron, P., 2011. The implementation of PHC re-engineering in South Africa. PHASA [Public Health Association of South Africa] online newsletter, 15 November 2011.

Pillay, Y., 2012. Municipal Ward Based Teams. *District Health System News* 5(1). Pretoria: Department of Health RSA.

Plsek, P.E. & Wilson, T., 2001. Complexity science: Complexity, leadership, and management in healthcare organisations. *British Medical Journal*, 323, pp.746–749.

Puoane, T.R., Tsolekile, L., Igumbor, E.U. & Fourie, J.M., 2012. Experiences in Developing and Implementing Health Clubs to Reduce Hypertension Risk among Adults in a South African Population in Transition. *International Journal of Hypertension*, 2012:913960.

Roberton, T., Applegate, J., LeFevre, A., et al., 2015. Initial experiences and innovations in supervising community health workers for maternal, newborn, and child health in Morogoro region, Tanzania. *Human Resources for Health*, 13:19.

Robson, C., 2002. *Real World Research* 2nd ed., Malden: Blackwell Publishing.

- Rotheram-Borus, M.J., Tomlinson, M., le Roux, I.M., et al., 2011. Philani Plus (+): a Mentor Mother community health worker home visiting program to improve maternal and infants' outcomes. *Prevention Science*, 12(4), pp.372–388.
- Sarriot, E., Morrow, M., Langston, A., Weiss, J., Landegger, J. & Tsuma, L., 2015. A causal loop analysis of the sustainability of integrated community case management in Rwanda. *Social Science and Medicine*, 131, pp.147–155.
- Sarriot, E., Sacks, E.R., Larson, A., 2016. Self-organization and emergence in global health: Insights from practice, blind spots and possible contributions from complexity science. *International Journal of Design & Nature and Ecodynamics*, 11,(4),pp.644–653.
- Schneider, H. & Lehmann U., 2010. Lay health workers and HIV programmes: implications for health systems. *AIDS Care*, 22 (Suppl 1), pp.60-7.
- Schneider, H. & Lehmann, U., 2016. From Community Health Workers to Community Health Systems : Time to Widen the Horizon ? *Health Systems & Reform*, 2(2), pp.112–118.
- Schneider, H. & Nxumalo, N., 2017. Leadership and governance of community health worker programmes at scale: a cross case analysis of provincial implementation in South Africa. (Forthcoming *International Journal for Equity in Health*).
- Schneider, H., Gilson, L., Ogden, J., Lush, L. & Walt, G., 2006. Health systems and the implementation of disease programmes: case studies from South Africa. *Global Public Health*, 1(1), pp.49–64.
- Schneider, H. Coetzee, D., van Rensburg, D., Gilson, L., 2010. Differences in antiretroviral scale up in three South African provinces: The role of implementation management. *BMC Health Services Research*, (Suppl 1):S4.
- Schneider, H., English, R., Tabana, H., Padayachee, T. & Orgill, M., 2014. Whole-system change: case study of factors facilitating early implementation of a primary health care reform in a South African province. *BMC Health Services Research*, 14:609.
- Schneider, H., Schaay, N., Dudley, L., Goliath, C. & Qukula, T., 2015. The challenges of reshaping disease specific and care oriented community based services towards comprehensive goals: a situation appraisal in the Western Cape Province, South Africa. *BMC Health Services Research*, 15:436.



- Schneider, H., Hlophe, H. & van Rensburg, D., 2008. Community health workers and the response to HIV/AIDS in South Africa: tensions and prospects. *Health Policy and Planning*, 23(3), pp.179–187.
- Schneider, H., Okello, D. & Lehmann, U., 2016. The global pendulum swing towards community health workers in low- and middle-income countries : a scoping review of trends , geographical distribution and programmatic orientations , 2005 to 2014. *Human Resources for Health*, 14:65.
- Scott, K. & Shanker, S., 2010. Tying their hands? Institutional obstacles to the success of the ASHA community health worker programme in rural north India. *AIDS Care*, 22 (Suppl 2), pp.1606–1612.
- Scott, V., Schaay, N., Olckers, P., Nqana, N., Lehmann, U., Gilson, L., 2014. Exploring the nature of governance at the level of implementation for health system strengthening: the DIALHS experience. *Health Policy and Planning*, 29(Suppl 2)pp.ii59-ii70.
- Sheikh, K., Gilson, L., Agyepong, I.A., Hanson, K., Ssengooba, F. & Bennett, S., 2011. Building the field of health policy and systems research: Framing the questions. *PLoS Medicine*, 8(8):e1001073
- Sheikh, K., George, A. & Gilson, L., 2014. People-centred science: Strengthening the practice of health policy and systems research. *Health Research Policy and Systems*, 12:19.
- Siddiqi, S., Masud, T.I., Nishtar, S., et al., 2009. Framework for assessing governance of the health system in developing countries: Gateway to good governance. *Health Policy*, 90(1), pp.13–25.
- Smith, S., Deveridge, A., Berman, J., et al., 2014. Task-shifting and prioritization: a situational analysis examining the role and experiences of community health workers in Malawi. *Human Resources for Health*, 12:24.
- Standing, H. & Chowdhury, A.M.R., 2008. Producing effective knowledge agents in a pluralistic environment: what future for community health workers? *Social Science and Medicine*, 66(10), pp.2096–2107.

Sundararaman, T., Ved, R., Gupta, G. & Samantha, M., 2012. Determinants of functionality and effectiveness of community health workers: results from evaluation of ASHA program in eight Indian states. *BMC Proceedings*, 6(Suppl 5):O30.

Tendler, J. & Freedheim, S., 1994. Trust in a Rent-Seeking World: Health and Government Transformed in North-East Brazil. *World Development*, 22(12), pp.1771–1791.

Thabethe, N., 2011. Community home-based care - a cost-effective model of care: who benefits? *AIDS Care*, 23(7), pp.787–791.

Third Global Forum on HRH, 2013a. Joint Commitment to Harmonized Partners Action for Community Health Workers and Frontline Health Workers, Recife, Brazil: Global Health Workforce Alliance, World Health Organization.

Third Global Forum on HRH, 2013b. Output document: Side Session on Community Health Workers and other Front Line Health Workers: Moving from fragmentation to Synergy to achieve Universal Health Coverage, Recife, Brazil: Global Health Workforce Alliance, World Health Organization.

Tomlinson, M., Doherty, T., Ijumba, P., et al., 2014. Goodstart: a cluster randomised effectiveness trial of an integrated, community-based package for maternal and newborn care, with prevention of mother-to-child transmission of HIV in a South African township. *Tropical Medicine & International Health*, 19(3), pp.256–266.

Touati, N., Maillet, L., Paquette, M.A., Denis, J.L. & Rodriguez, C., 2015. Understanding Multilevel Governance Processes : The Case of the Québec Healthcare System. Paper presented at the International Conference on Public Policy 1-4 July , 2015 , Milan, Italy.

Treerutkuarkul, A., 2008. News Thailand's unsung heroes [News]. *Bulletin of the World Health Organization*, 86(1), p.5.

Tulenko, K., Mogedal, S., Afzal M.M, et al., 2013. Community health workers for universal health-care coverage: from fragmentation to synergy. *Bulletin of the World Health Organization*, 91, pp.847-852.

UNDESA, UNDP & UNESCO, 2012. Governance and development: Thematic Think Piece, Geneva: UN System Task Team on the Post-2015 Development Agenda.

UNICEF & WHO, 2012. WHO/UNICEF Joint Statement: Integrated Community Case Management (iCCM), Geneva & New York: World Health Organization & UNICEF.

Uwimana, J., Zarowsky, C., Hausler, H. & Jackson, D., 2012. Training community care workers to provide comprehensive TB/HIV/PMTCT integrated care in KwaZulu-Natal: lessons learnt. *Tropical Medicine & International Health*, 17(4), pp.488–496.

Van Belle, S.B., Marchal, B., Dubourg, D. & Kegels, G., 2010. How to develop a theory-driven evaluation design? Lessons learned from an adolescent sexual and reproductive health programme in West Africa. *BMC Public Health*, 10:741.

van Ginneken, N., Lewin, S. & Berridge, V., 2010. The emergence of community health worker programmes in the late apartheid era in South Africa: An historical analysis. *Social Science and Medicine*, 71(6), pp.1110–1118.

van Olmen, J., Criel, B., van Damme, W., et al., 2012. *Analysing Health System Dynamics: A Framework*, Antwerp, Belgium: Institute of Tropical Medicine, Antwerp.

Walt, G. & Gilson, L., 1994. Reforming the health sector in developing countries: The central role of policy analysis. *Health Policy and Planning*, 9(4), pp.353–370.

Walt, G., Shiffman, J., Schneider, H., Murray, S., Brugha, R. & Gilson, L., 2008. 'Doing' health policy analysis: Methodological and conceptual reflections and challenges. *Health Policy and Planning*, 23(5), pp.308–317.

Walt, G., Perera, M. & Heggenhougen, K., 1989. Are large-scale volunteer community health worker programmes feasible? The case of Sri Lanka. *Social Science and Medicine*, 29, pp.599–608.

Wazny, K., Sadruddin, S., Zipursky, A., et al., 2014. Setting global research priorities for integrated community case management ( iCCM ): Results from a CHNRI ( Child Health and Nutrition Research Initiative ) exercise. *Journal of Global Health*, 4(2):020413.

Winangnon, S., Sriamporn, S., Senarak, W., Saranrittichai, K., Vatanasapt, P. & Moore, M.A., 2007. Use of lay health workers in a community-based chronic disease control program. *Asian Pacific Journal of Cancer Prevention*, 8(3), pp.457–461.

World Health Organization (WHO), 2000. *The World Health Report 2000 - Health Systems: Improving Performance*, Geneva, Switzerland: World Health Organization.

World Health Organization (WHO), 2004. Child health in the community 'Community IMCI': briefing package for facilitators, Geneva, Switzerland: World Health Organization.

World Health Organization (WHO), 2007. Everybody's Business: Strengthening Health Systems to Improve Health Outcomes: WHO's Framework for Action, Geneva, Switzerland: World Health Organization.

World Health Organization (WHO), 2012. Strategy on Health Policy and Systems Research: Changing Mindsets, Geneva, Switzerland: World Health Organization.

Wouters, E., van Damme, W., van Rensburg, D., Masquillier, C. & Muelemans, H., 2012. Impact of community-based support services on antiretroviral treatment programme delivery and outcomes in resource-limited countries: a synthetic review. *BMC Health Services Research*, 12:194.

Yin, R.K., 2013. Validity and generalization in future case study evaluations. *Evaluation*, 19(3), pp.321–332.

Yin, R.K., 2014. *Case Study Research: Design and Methods* 5th ed., Los Angeles: Sage Publications, Inc.

Zulu, J.M., Kinsman, J., Michelo, C. & Hurtig, A.K., 2013. Developing the national community health assistant strategy in Zambia: a policy analysis. *Health Research Policy and Systems*, 11:24.

## **Annexures 1 & 2: Papers 5 & 6**

REVIEW

Open Access



# The global pendulum swing towards community health workers in low- and middle-income countries: a scoping review of trends, geographical distribution and programmatic orientations, 2005 to 2014

Helen Schneider<sup>1\*</sup> , Dickson Okello<sup>2</sup> and Uta Lehmann<sup>3</sup>

## Abstract

**Background:** There has been a substantial increase in publications and interest in community health workers (CHWs) in low- and middle-income countries (LMIC) over the last years. This paper examines the growth, geographical distribution and programmatic orientations of the indexed literature on CHWs in LMIC over a 10-year period.

**Methods:** A scoping review of publications on CHWs from 2005 to 2014 was conducted. Using an inclusive list of terms, we searched seven databases (including MEDLINE, CINAHL, Cochrane) for all English-language publications on CHWs in LMIC. Two authors independently screened titles/abstracts, downloading full-text publications meeting inclusion criteria. These were coded in an Excel spreadsheet by year, type of publication (e.g. review, empirical), country, region, programmatic orientation (e.g. maternal-child health, HIV/AIDS, comprehensive) and CHW roles (e.g. prevention, treatment) and further analysed in Stata14. Drawing principally on the subset of review articles, specific roles within programme areas were identified and grouped.

**Findings:** Six hundred seventy-eight publications from 46 countries on CHWs were inventoried over the 10-year period. There was a sevenfold increase in annual number of publications from 23 in 2005 to 156 in 2014. Half the publications were reporting on initiatives in Africa, a third from Asia and 11 % from the Americas (mostly Brazil). The largest single focus and driver of the growth in publications was on CHW roles in meeting the Millennium Development Goals of maternal, child and neonatal survival (35 % of total), followed by HIV/AIDS (16 %), reproductive health (6 %), non-communicable diseases (4 %) and mental health (4 %). Only 17 % of the publications approached CHW roles in an integrated fashion. There were also distinct regional (and sometimes country) profiles, reflecting different histories and programme traditions.

**Conclusions:** The growth in literature on CHWs provides empirical evidence of ever-increasing expectations for addressing health burdens through community-based action. This literature has a strong disease- or programme-specific orientation, raising important questions for the design and sustainable delivery of integrated national programmes.

**Keywords:** Community health worker, Lay health worker, Village health worker, Maternal-child health, Community health worker programmes, Integrated community case management

\* Correspondence: [hschneider@uwc.ac.za](mailto:hschneider@uwc.ac.za)

<sup>1</sup>School of Public Health & SAMRC/UWC Health Services to Systems Unit, University of the Western Cape, Robert Sobukwe Road, Bellville, Cape Town 7535, South Africa

Full list of author information is available at the end of the article



© The Author(s). 2016 **Open Access** This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made. The Creative Commons Public Domain Dedication waiver (<http://creativecommons.org/publicdomain/zero/1.0/>) applies to the data made available in this article, unless otherwise stated.

## Background

As has now been noted by many, the Millennium Development Goal (MDG) era saw a global resurgence of interest in the role of community health workers (CHWs) in health systems, an interest that is set to continue in new global health agendas [1]. The mobilization of international funding from bilateral, multilateral and private philanthropic sources has greatly increased investment in programmes to meet the MDG targets. Further, through the popularization of the concept of “task shifting”, the involvement of lay and community health workers has emerged as a rational strategy for addressing the vast shortfall in human resources impeding the roll-out of programmes in many countries.

A feature of countries that made the most progress in the health of their populations has been their investment in strategies that engage households and communities directly as part of primary health care [2]. An expanding list of countries with large-scale and stable CHW programmes and a growing evidence base on the effectiveness of CHWs in achieving specific health outcomes [3–6] have brought renewed global confidence in CHWs. A number of significant international consensus statements have recommended that CHW programmes be integrated into health systems, increasingly linking these to the concept of universal health coverage (UHC) [7–9].

Driven by different imperatives and needs, CHW initiatives have taken a variety of regional- and country-specific forms. Some, such as the Brazilian *Programa Saúde da Família*, Ethiopia's health extension workers and the *Behvarzs* of Iran, have been part of broader social, political and health sector change. In several Asian countries (Pakistan, Bangladesh, Nepal), CHW programmes have been established in response to the public health challenge of high maternal, neonatal and under-5 mortality. In the HIV-affected countries of southern Africa, home-based care and support emerged organically through local community and non-governmental organizations as a response to overwhelming care and social needs. In other African countries, Global Health Initiatives and partnerships focused on malaria and childhood illness have been influential. CHWs and CHW programmes are thus a broad umbrella concept and practice under which a diverse array of programmatic priorities, roles and forms of community involvement in health and health care delivery exist.

How are this diversity and the global pendulum swing towards CHWs reflected in the research on CHWs and CHW programmes? We report on a scoping review of trends, geographical distribution and programmatic orientations in the indexed literature on CHWs in low- and middle-income countries over a 10-year period (2005–2014). A scoping review aims to “map the existing literature in a field of interest in terms of the volume, nature

and characteristics of the primary research” [10]. The purpose of this review is thus not to appraise or synthesize the evidence base for effectiveness, feasibility or impact of CHWs, or to assess the quality of research, but rather to present a descriptive account of the contours of a rapidly evolving and heterogeneous field.

Specifically, we were animated by the following questions:

1. What are the trends in numbers of publications on CHWs?
2. Which countries and regions are represented in these trends?
3. What is the profile of health programmes and global health agendas (e.g. maternal-child health, HIV/TB)?
4. What types of CHW roles (e.g. prevention, treatment, social mobilization) are being foregrounded?
5. What does it suggest for future thinking on CHW programmes?

Our definition of a CHW for the purpose of this review is that proposed by Naimoli et al. [11] as “a health worker who receives standardized training outside the formal nursing or medical curricula to deliver a range of basic health, promotional, educational, and outreach services, and who has a defined role within the community system and larger health system.” In this review, we focus on those cadres whose activities are primarily community- rather than facility based.

## Methods

### Scoping review methodology

The review methodology followed broadly the steps proposed by Levac et al. [12]. HS and UL developed the scoping review questions (and coding schemes) based on previous literature reviews. After an initial search, the volume of new literature in recent years immediately became apparent. Since we were primarily interested in trends and patterns, we decided to limit the scope of the search to the indexed literature and focus on a 10-year period. In October 2015, we searched the following electronic databases through EBSCOhost: Academic Search Premier, Africa-Wide Information, CINAHL, PsycINFO, SocINDEX and MEDLINE, for all English-language publications on CHWs, indexed from 2005 to 2014, and in countries defined by the World Bank as low- and middle income (<http://data.worldbank.org/news/new-country-classifications-2015>). We also searched the Cochrane database for systematic reviews on CHWs.

Recognizing the wide diversity of forms and titles of CHWs across the globe, we developed an inclusive list of search terms (Table 1). However, we deliberately excluded certain terms, such as traditional birth attendants

**Table 1** Search terms and inclusion/exclusion criteria

Search terms	"community health worker*" OR "volunteer health worker*" OR "lay health worker*" OR "lay health advis*r" OR "lay health advis*rs" OR "lay health educator*" OR "village health worker*" OR "village health volunteer*" OR "lady health worker*" OR "community health volunteer*" OR "community health agent*" OR "community health promotion" OR "community health promoter*" OR "community health aide*" OR "health assistant worker*" OR "home based care" OR "home community based care*" OR "community health agent*" OR "health surveillance assistant*" OR "community care giver*" OR "community caregiver" OR "accredited social health activists" OR "asha" OR "mitanins" OR "mitanin" OR "family health team*" OR "family health program*" OR "integrated community case management" OR "ICCM"
Inclusion/exclusion criteria	<p>English-language publications</p> <p>Low- and middle-income countries</p> <p>Empirical findings, reviews, trial protocols, extended analyses, scientific letters and conference proceedings</p> <p>Not the following:</p> <ul style="list-style-type: none"> <li>• Editorials, letters, short commentaries, news items</li> <li>• Traditional birth attendants and traditional healers</li> <li>• Facility-based cadres, such as lay counsellors</li> <li>• Family care givers, peer supporters or counsellors, expert patients</li> <li>• Community medicine retailers/sellers</li> <li>• Community rehabilitation workers</li> <li>• CHWs as field workers for research</li> <li>• CHWs as a recommendations but not a focus of the findings</li> <li>• Household surveys describing utilization of different providers, including CHWs</li> </ul>

and facility-based lay counsellors, as these would have touched on significant other bodies of literature.

The search was conducted sequentially with all the EBSCOhost databases except MEDLINE searched together in the first step, followed by the search of MEDLINE in a second step. Each step yielded 5635 and 1445 hits, respectively.

From October 2015 to January 2016, two authors (HS and DO) independently screened the titles and abstracts obtained in these searches, based on the inclusion criteria (Table 1). In this initial process, we selected a total of 897 publications, which were entered in a database (Mendeley) and full texts downloaded. Entries were then independently coded by two authors (HS and DO) in an Excel spreadsheet following the scheme outlined in Table 2. In an iterative process that involved removing publications that did not meet the inclusion criteria, and adding relevant publications identified in the subset of review papers, a final total of 678 publications was selected for analysis.

Coding relied on the abstract in the first instance, with further verification based on the full-length article, if the abstract was not sufficient. We categorized each entry into year of publication, country and region, and type of publication—empirical, review or “analysis”. Empirical pieces reported research findings (qualitative or quantitative), and reviews were formal appraisals of the literature based on an identifiable search strategy. Some papers used “review” in the title in a more colloquial sense but were substantive reflections or commentaries, drawing on the literature, but not adopting a structured

review strategy. We categorized these papers as “analyses”. Publications were also categorized by programmatic focus based on the conventionally accepted approaches (such as maternal-child health, malaria, reproductive health, comprehensive), drawing firstly on the title and abstract, and if this was not stated by scanning the full-length paper for a description of CHW roles. Additional file 1: Table S1 gives a detailed breakdown of the items included under each of the codes. We also noted the type of role such as treatment or prevention or both—performed by the CHWs. The coded items in the Excel spreadsheet were imported into Stata (Version 14) for descriptive quantitative

**Table 2** Coding scheme for extracted papers

Theme	Code
Programmatic focus	Maternal-child health (MCH)
	HIV/TB
	Malaria
	Reproductive health
	Non-communicable diseases
	Mental health
	Other
	Comprehensive (two or more of the above)
	Treatment
	Prevention and promotion (including advocacy and social mobilization)
Role	Care, counselling, adherence
	Screening, referral, mediating access
	Two or more of the above



analysis. A qualitative, thematic analysis of key roles within each programmatic area was done, drawing on the subset of review and multi-country articles in the first instance, followed by reading of individual papers if the reviews were judged not sufficient.

### Limitations

The findings reported are not a full inventory of all research and publications on CHWs but rather the trends and patterns of a delimited body of literature in the field, through one search process. Given the volume of publications, we did not conduct a grey literature search. However, we recognize there are significant and influential publications [9, 13–15] and consensus statements [7, 16] in this sphere, whose insights have not necessarily made their way into the indexed literature.

Choices were made in the classification of the paper's programmatic focus. For example, the prevention of mother to child transmission of HIV (PMTCT) interventions, because they overlap with general maternal health (breastfeeding, antenatal care), were classified under maternal-child health (MCH) rather than HIV/TB. On the other hand, studies evaluating intermittent preventive treatment of malaria in children (IPTc) were classified under malaria because they most often emerged from a malaria programmatic focus. However, integrated community case management interventions, combining pneumonia and malaria treatment of children, were classified under MCH. The specific choices are reflected in Additional file 1: Table S1.

To limit the scope of the review, we also excluded facility-based cadres as it would have meant assessing a growing body of work on task shifting within health facilities, especially in HIV-affected countries where lay counsellors have become an integral part of primary health care teams. Unfortunately, this also excluded significant developments in the field of mental health (see, for example, [17, 18]).

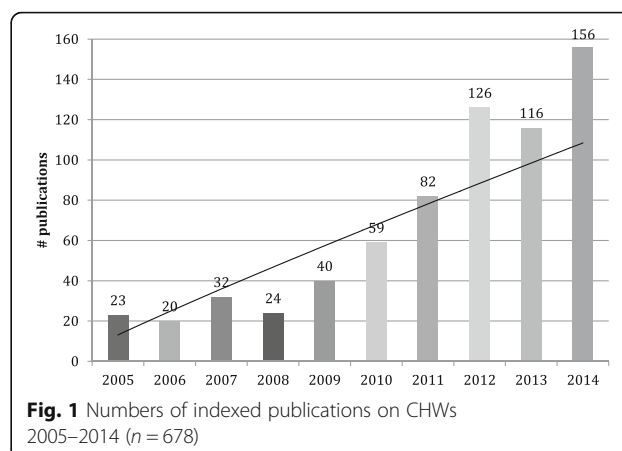
This review does not address a key preoccupation in the literature on the support and systems dimensions of CHW programmes, such as supervision, retention, motivation, monitoring and financing of CHWs.

## Findings

### Overall profile, trends and geographical distribution

Of the 678 papers, 604 (89 %) were empirical pieces, 55 (8 %) were reviews and 19 (3 %) were analyses. There was a nearly sevenfold growth in annual number of publications over the period, from 23 in 2005 to 156 in 2014 (Fig. 1).

The papers reported experiences in 46 countries (Additional file 2: Figure S1), with 17 countries contributing at least 10 publications each, amongst them the globally recognized national CHW initiatives (Table 3).



Half of the publications came from the Africa Region, just under a third from the Asia/Pacific Region, and 6.5 % had a global perspective. Iran was the only country contributing experiences from the Middle East Region, and the Brazilian programme accounted for 80 % of publications from Latin America, possibly reflecting the English-language bias of the review (Additional file 3: Table S2). Three middle-income countries—South Africa, India and Brazil—each contributed 60 or more papers, together making up 30 % of the total publications.

### Programmatic focus

The profile of programmatic foci in the publications, by region and country, is summarized in Table 3 and provided in full in Additional file 3: Table S2.

### Maternal-child health focus

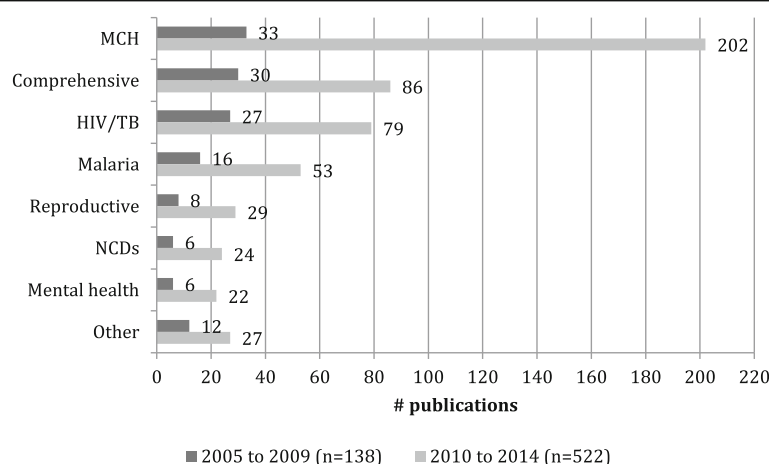
By far the most commonly reported CHW roles were those focused on maternal-child health (MCH), accounting for over a third of the total papers as well as the subset of reviews. When comparing the first and second halves of the review period, MCH was also the biggest driver of growth in publications (Fig. 2). The global emergence and promotion of integrated community case management (iCCM) of childhood illness, particularly in Africa, is the single most important element in this. iCCM is a community and CHW-based child survival strategy, adopted by WHO and UNICEF [16]. Three special editions on iCCM were produced in the review period, one in 2012 (*American Journal of Tropical Medicine and Hygiene*) and two in 2014 (*Ethiopian Medical Journal*, *Journal of Global Health*), accounting for the spikes in publications in those 2 years (Fig. 1).

CHW roles in MCH were clustered into three broad areas:

- Maternal and newborn health, including birth preparedness and distribution of misoprostol to prevent post partum haemorrhage in home

**Table 3** Profiles of publications on CHWs in LMIC, 2005–2014

Characteristic		Number	Percent
Type	Empirical	604	89.1
	Review	55	8.1
	Analysis	19	2.8
Region	Africa	345	50.9
	Asia/Pacific	202	29.8
	Americas	75	11.1
	Middle East	12	1.8
	Cross-regional	44	6.5
Countries with 10 or more publications (with name of main CHW cadre)	India (accredited social health activist)	70	10.3
	South Africa	71	10.5
	Brazil (community health agent)	60	8.8
	Ethiopia (health extension worker)	39	
	Uganda (village health teams)	34	
	Malawi (health surveillance assistant)	32	
	Pakistan (lady health worker)	32	
	Kenya	31	
	Bangladesh ( <i>Shasthya Shebika</i> (BRAC))	28	
	Zambia (community health assistant)	20	
	Nepal (female community health volunteer)	19	
	Ghana	17	
	Tanzania	16	
	Nigeria	14	
	Thailand (community health volunteer)	12	
	Iran ( <i>behvarz</i> )	12	
	Rwanda (binome)	11	
	Total	518	76.4
Programmatic orientation of publications	MCH	235	34.7
	Comprehensive	116	17.1
	HIV/TB	106	15.6
	Malaria	69	10.2
	Reproductive health	37	5.5
	Non-communicable diseases	30	4.4
	Mental health	28	4.1
	Other	39	5.8
	Not specified	18	2.7
Programmatic orientation of reviews ( <i>n</i> = 55)	MCH	21	38.2
	Comprehensive	11	20.0
	HIV/TB	6	10.9
	Malaria	4	7.3
	Mental health	4	7.3
	Reproductive health	1	1.8
	Other	3	5.5
	Not specified (system-strengthening focus)	5	9.1



**Fig. 2** Publication numbers by programme area 2005–2009 and 2010–2014 (excluding “not specified”) ( $n = 660$ )

deliveries [19, 20]; postnatal home visiting, umbilical cord care, thermal care, promotion of exclusive breast feeding and treatment of neonatal infection; [21–23] and support to mothers and infants for the prevention of mother to child transmission of HIV [24–26].

- Promotion of child health, including uptake of immunization [27]; nutrition, including breast feeding, micronutrient supplementation and supplemental feeding [28]; community management of malnutrition [29]; and early childhood development [30, 31].
- Treatment of childhood illness [32, 33] in particular the iCCM strategy [34]. iCCM combines the diagnosis and treatment of malaria with artemisinin combination therapy (ACT), pneumonia with oral antibiotics and diarrhoea with zinc and oral rehydration salts (ORS). It has been facilitated by the development of rapid diagnostic tests (RDTs) for malaria, thus allowing for more accurate diagnosis of fever in young children.

iCCM has been promoted by WHO and UNICEF across sub-Saharan Africa and integrated to varying degrees in country CHW initiatives [35]. It was the most common theme in comparative or cross-country publications from Africa (19 out of 34 papers). While MCH was also a dominant focus of CHW studies from Asia, these programmes were orientated to maternal and newborn health and were more preventive and promotive in approach. They also tended to be tailored programmes, developed in context-specific ways and involving a greater level of community mobilization and participation in their design [36]. In contrast to the African continent, there were no multi-country empirical studies from Asia.

### **Comprehensive focus**

Seventeen percent of publications approached CHW roles comprehensively. Publications in this category included systematic reviews addressing the effectiveness of CHWs across a number of programmatic areas, including maternal-child health, HIV and TB [3, 6]. They also included reports or evaluations of provincial or national programmes, amongst them the recognized ones listed in Table 3 (see, for example, [37–40]).

In general, the comprehensive programmes were large-scale government initiatives that combined disease/programme-specific tasks with social, environmental and health surveillance roles. The activities spanned prevention, promotion, treatment and community mobilization. Table 4 outlines the roles of three typical cadres, the health extension workers (HEWs) in Ethiopia, the health surveillance assistant (HSAs) in Malawi and the *Behvarzs* in Iran. These cadres are government employed and receive basic training ranging from 3 months (HSA) to 1 year (HEW) and 2 years (*Behvarz*).

As the evidence base on CHW roles and access to diagnostic and treatment technologies expand, a key risk in comprehensive programmes is role overload. A number of papers addressed this, outlining the need to maintain realistic expectations and workloads of CHWs and proposing new ways of configuring community-based services, such as specialization of functions and a division of labour [41, 42]. Related to this is the ongoing preoccupation with maintaining an appropriate balance between prevention, treatment, facilitating access and community mobilization [43].

### **Other programmatic foci**

The next biggest programmatic focus of publications was on HIV/AIDS and TB (16 %). More than three quarters (76 %) of the publications with this focus came from

**Table 4** CHW roles in comprehensive national programmes

Health extension worker (source: [97])	Health surveillance assistance (sources: compiled from [41, 98])	Behvarz (source: [99])
Family health: • Family planning • Maternal, newborn and child health • Nutrition • Vaccination Disease prevention and control: • HIV/AIDS and STDs • Tuberculosis • Malaria • First aid Hygiene and environmental sanitation: • Construction and maintenance of sanitary latrines • Solid and liquid waste disposal • Water supply safety • Control of insects and rodents • Food hygiene and safety • Personal hygiene • Healthy home environment Health education and communication	Environmental health: • Hygiene, sanitation and water supply • Disease surveillance and outbreak response • Vector and vermin control Maternal-child health: • Immunization, vitamin A, de-worming; growth monitoring, nutritional supplementation, tetanus vaccination; • Integrated community case management Reproductive health: • Condoms and oral and injectable contraceptives HIV/TB: • Testing/screening, follow-up, drug dispensing Treatment and referral of minor ailments Community education Training and supervision of village health councils	Annual census Providing basic health care: • Maternal and child health, delivery • Family planning • Oral health • Youth and elderly health • Community-based rehabilitation Preventive activities: • Health education, screening Disease management: • Communicable and non-communicable diseases School health: • School environment • Screening Environmental health: • Food safety, sanitation, safe water Occupational health Collaborations: • Rural health councils • Family doctors Promoting community participation and inter-sectoral collaboration

the heavily AIDS-affected countries of sub-Saharan Africa (particularly South Africa) (Additional file 3: Table S2). The CHW roles in HIV/AIDS and TB were mostly oriented towards care, counselling, adherence and social support and promoting patient self-management, with some elements of prevention and promotion [44]. In an earlier period, they were focused on palliative home-based care and on implementing the WHO-advocated “DOTS” (Directly Observed, Short Course treatment) for TB [45, 46]. With the advent of antiretroviral therapy, roles shifted towards home-based HIV testing; referral for, or home initiation of, antiretroviral therapy (ART); and community-based adherence support and follow-up of care for ART [47, 48] and TB treatment [49], increasingly as integrated programmes [50, 51]. In a number of countries, the mobilization of community health workers for HIV/AIDS appears to have emerged as a parallel development alongside other programmatic initiatives, producing a mixed profile of lay health work and posing challenges of local coordination and integration [52, 53].

Ten percent of publications reported on the role of CHWs in the control of malaria (apart from their contribution to iCCM). These included community case management or home management of malaria with or without the use of rapid diagnostic tests [54], distribution of intermittent preventive treatment (IPT) to pregnant women and children [55–57] and the promotion of insecticide-impregnated bed nets [58].

CHWs have long established roles in family planning (often referred to as community-based distributors) and commonly provided as vertical programmes [59]. Several papers reported on experiences with CHWs providing

injectable contraceptives [4], including the more recent contraceptive implants (Implanon) [60]. CHWs have also been involved in promoting cervical [61] and breast cancer screening [62, 63].

Other established specialist CHW roles reported in the period include the distributors of ivermectin to treat river blindness in the “community-directed interventions” [64] developed by the WHO/TDR-supported African Programme for Onchocerciasis Control. Similar roles were also reported for other “neglected tropical diseases” such as schistosomiasis [65] and trachoma [66]. CHWs were also deployed in the early detection of Buruli ulcer [67] and visceral leishmaniasis [68] in high-burden areas.

#### **Emerging programme foci**

Reflecting changing demographic and epidemiological profiles, a small but steady number of publications across years and regions addressed CHW roles in non-communicable diseases. They included primary preventive programmes for cardiovascular disease and diabetes, focusing on lifestyle risk factors such as physical activity, diet and smoking cessation in Thailand [69], India [70], Pakistan [71], Brazil [72] and Ghana [73]; community-based screening, referral and follow-up in Kenya [74], South Africa [75], Iran [76], Brazil [77] and Pakistan [78]; and population surveillance for NCDs in India [79]. There were no reviews within or across low- and middle-income countries (LMIC) of CHW roles in chronic disease care in the period.

A number of empirical papers and reviews reported on the integration of mental health into existing CHW initiatives [5]. In Pakistan, Lady Health Workers successfully

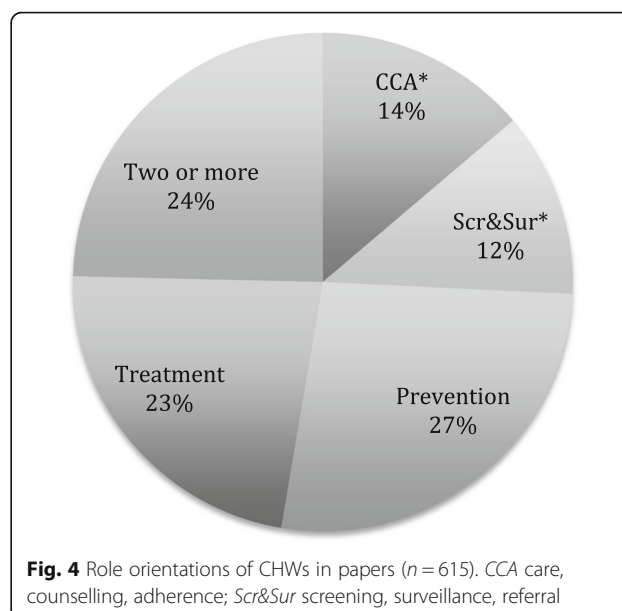
provided cognitive-based therapies for perinatal depression [80]. In Malawi and Kenya, CHWs were given general training in mental health awareness, identification and family support [81, 82]. In Brazil, community health agents screened for dementia and depression in the elderly [83, 84]. In India, community-based care for schizophrenia and dementia sufferers was evaluated as part of “collaborative care” (in a team with professionals) [85, 86].

### Regional variations

Programmatic emphases varied between regions (Fig. 3). In Africa, with high burdens of malaria and HIV, publications were more evenly distributed between HIV/TB, malaria and MCH. In Asia, MCH dominated as a programmatic focus, although with significant nodes of development in mental health and NCDs. The comprehensive orientation of the Latin American publications reflects the influence of the Brazilian Family Health Programme, which is delivered with the close support of health professionals and primary health care facilities.

### Types of roles

Where this was identifiable ( $n = 615$  papers), the roles of CHWs along the promotion-prevention-treatment continuum were coded. These were broadly clustered in four areas (Fig. 4): (1) diagnosis and treatment (notably in iCCM and malaria); (2) prevention and promotion, spanning the distribution of preventive technologies (such as contraceptives), to education (such as newborn health, breast feeding), to processes of social mobilization; (3) screening, referral and surveillance activities, such as early detection of cancers or chronic disease; and (4) counseling, care and adherence support for adults receiving treatment for chronic conditions (such as HIV/TB, mental illness). One quarter of the papers reported roles spanning



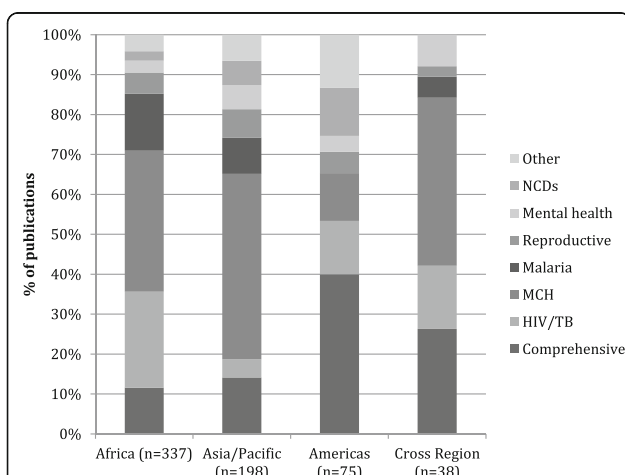
two or more of these areas, with several papers suggesting the importance of combined roles in the community legitimacy of CHWs [43, 87].

### Within-country plurality

Publications most often focused on evaluating or describing the work of one type of CHW. However, even in countries with recognized national programmes, the papers from this country, when brought together as a collection, portrayed a more diverse reality. In Ethiopia, for example, where the health extension workers (HEWs) are the recognized CHWs, at least two other community-based workers in communities were described: the community-based reproductive agents delivering contraceptive technologies [88] and community AIDS volunteers linked to NGOs and ART treatment programmes [53, 89]. Within the Health Extension Programme itself, HEWs relate to a cascade of community actors: they mobilize volunteer community health workers, also referred to as the Health Development Army, who, in turn, nominate female household members for training as “model households” [39, 90].

In Uganda, where community health workers are volunteers, and where roles and functions were less clearly defined nationally, the 34 papers in the collection described a plethora of disease- or programme-specific workers and interventions, including iCCM, maternal and new born health, reproductive health, malaria, onchocerciasis, antiretroviral therapy for HIV and palliative care.

Standing and Chowdhury [91] describe how community health workers in Bangladesh are positioned in dense and plural local health care environments, where they are but one player amongst the many informal, formal and traditional sources of care and healing which



**Fig. 3** Regional profile of programmatic orientations (excluding the Middle East and “not specified”,  $n = 648$ )



community members draw on. In such contexts, CHWs play a variety of different roles—as a generic provider linked to an agency (such as Building Resources Across Communities (BRAC)), specialized workers (e.g. reproductive health distributors), as agents that mediate relationships between households and the formal health system or as expert patients.

## Discussion

There has been a large growth in publications on CHWs in recent years, most notably since 2011. This growth has been driven by the MDGs, especially those related to child survival, which have placed heavy emphasis on community-based activities. The integrated community case management strategy, in particular, was the product of a concerted global agenda setting process by an “epistemic community” of international NGOs, multilateral and bilateral agencies and academic actors, who developed and promoted a package of feasible interventions targeted at the major causes of child mortality [92].

Despite the extensive reliance on lay health workers and greater levels of international funding flowing to HIV/AIDS [93], there were fewer publications, whether empirical, comparative or review, addressing this programme area. There are a number of possible reasons for this: the review period may have missed an earlier generation of publications on community caregivers and counsellors; strategies such as the “community system strengthening” framework of the Global Fund for AIDS, TB and Malaria [94] and UNAIDS’ “90-90-90” treatment targets [95] have not focused specifically on CHWs as players; HIV-treatment programmes tend to be facility based; and the HIV response also has a shorter history than the child survival interventions, which evolved into the iCCM package in an iterative process over many years and which built on a long-standing MCH focus in primary health care.

As low- and middle-income countries confront a new generation of health challenges such as non-communicable diseases, mental health and violence and injury, the repertoire of possible CHW roles is ever-expanding. There is a danger of role fragmentation and overload and a need to re-think roles in new and more complex ways. Layered approaches where roles are distributed amongst a number of cadres from expert patient to volunteer to remunerated cadres may be required [39, 91]. Similarly, strategies of specialization [41] and the balance between disease-specific and integrated approaches need to be defined. In the process, there is a risk that the social and environmental health roles of CHWs get crowded out by technical and treatment roles of core cadres, especially if the latter are incentivized [43].

The CHW programmes and interventions reported also reflected different orientations along a continuum of technical/biomedical to social/participatory and with

different mixes of prevention, promotion, treatment and social mobilization. Some approached CHW roles as a set of predefined intervention packages, while in others CHW roles emerged as tailored programmes specific to local and national contexts, sometimes developed through action-learning methodologies. These differences suggest different kinds of relationship to community. They tended to follow regional and country lines indicating their different histories, programmatic traditions and discourses. This is worthy of further examination.

Similarly, the initiatives reported had varying degrees of closeness to government and the formal health system. Most LMIC health systems have experimented with and developed policy on CHWs. However, the extent to which reports (whether programme specific or comprehensive) were embedded in or reported on official, national CHW programmes varied considerably. As the number of initiatives grows, the need for national and local coordination and stewardship becomes more urgent. While some of the papers touched on these broader system questions, it is beyond the scope of this paper to discuss these.

## Conclusions

The growth in literature on CHWs provides empirical evidence of increasing expectations for addressing health burdens through CHWs and community-based action. However, as Tulenko et al. point out, these developments have been heavily donor dependent, resulting in a fragmented environment where disease-specific responses dominate [8]. This raises important questions of sustainability and the need to integrate the plethora of new initiatives into coherent national programmes and local primary health care systems [35, 96].

## Additional files

**Additional file 1: Table S1.** Coding of papers by theme. (DOCX 16 kb)

**Additional file 2: Figure S1.** Distribution of publications by region and country. (DOCX 15 kb)

**Additional file 3: Table S2.** Distribution of publications by region, country and programmatic focus. (DOCX 77 kb)

## Abbreviations

ART: Antiretroviral therapy; BRAC: Building Resources Across Communities (formerly Bangladesh Rural Advancement Committee); CHW: Community health worker; HEW: Health extension worker; iCCM: Integrated community case management; LMIC: Low- and middle-income countries; MCH: Maternal-child health; NCD: Non-communicable disease

## Acknowledgements

Not applicable.

## Funding

The scoping review was supported by the SAMRC/UWC Health Services to Systems Unit.

**Availability of data and materials**

Not applicable.

**Authors' contributions**

HS led the review. DO conducted the literature search and DO and HS screened the abstracts and coded the entries. HS conducted the analysis and drafted the article. UL provided advice at all stages. All authors read and approved the final manuscript.

**Competing interests**

The authors declare that they have no competing interests.

**Consent for publication**

Not applicable.

**Ethics approval and consent to participate**

Not applicable.

**Author details**

<sup>1</sup>School of Public Health & SAMRC/UWC Health Services to Systems Unit, University of the Western Cape, Robert Sobukwe Road, Bellville, Cape Town 7535, South Africa. <sup>2</sup>Health Policy and Systems Division, School of Public Health and Family Medicine, University of Cape Town, Anzio Road, Observatory, Cape Town 7925, South Africa. <sup>3</sup>School of Public Health, University of the Western Cape, Robert Sobukwe Road, Bellville, Cape Town 7535, South Africa.

Received: 26 May 2016 Accepted: 10 October 2016

Published online: 26 October 2016

**References**

- Campbell J, Admasu K, Soucat A, Tlou S. Maximizing the impact of community-based practitioners in the quest for universal health coverage. *Bull World Health Organ*. 2015;93(9):590A.
- Balabanova D, Mills A, Conteh L, Akkazeia B, Banteyerga H, Dash U, et al. Good health at low cost 25 years on: lessons for the future of health systems strengthening. *Lancet*. 2013;381(9883):2118–33.
- Lewin S, Munabi-Babigumira S, Glenton C, Daniels K, Bosch-Capblanch X, van Wyk BE, et al. Lay health workers in primary and community health care for maternal and child health and the management of infectious diseases (Review). *Cochrane Database Syst Rev*. 2010;(3):CD004015.
- Malarcher S, Meirik O, Lebetkin E, Shah I, Spieler J, Stanback J. Provision of DMPA by community health workers: what the evidence shows. *Contraception*. 2011;83(6):495–503.
- Mutamba BB, van Ginneken N, Paintain LS, Wandiembe S, Schellenberg D. Roles and effectiveness of lay community health workers in the prevention of mental, neurological and substance use disorders in low and middle income countries: a systematic review. *BMC Health Serv Res*. 2013;13:412.
- Perry H, Zulliger R, Rogers M. Community health workers in low-, middle-, and high-income countries: an overview of their history, recent evolution, and current effectiveness. *Annu Rev Public Health*. 2014;35:399–421.
- Third Global Forum on HRH. Joint commitment to harmonized partners action for community health workers and frontline health workers. Global Health Workforce Alliance: Third Global Forum on Human Resources for Health. Recife, Brazil; 2013.
- Tulenko K, Mogedal S, Afzal MM, Frymus D, Oshin A, Pate M, et al. Community health workers for universal health-care coverage: from fragmentation to synergy. *Bull World Health Organ*. 2013;91:847–52.
- Dahn B, Woldemariam A, Perry H, Maeda A, von Glahn D, Panjabi R, Merchant N, Vosburg K, Palazuelos D, Lu C, et al. Strengthening primary health care through community health workers: investment case and financing recommendations. Geneva: Office of UN Secretary General's Special Envoy for Financing the Health Millennium Development Goals and for Malaria; 2015. Technical Report.
- Pham MT, Rajić A, Greig JD, Sargeant JM, Papadopoulos A, McEwen SA. A scoping review of scoping reviews: advancing the approach and enhancing the consistency. *Res Synth Methods*. 2014;5:371–85.
- Naimoli JF, Frymus DE, Wuliji T, Franco LM, Newsome MH. A community health worker 'logic model': towards a theory of enhanced performance in low- and middle-income countries. *Hum Resour Health*. 2014;12(1):56.
- Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology. *Implement Sci*. 2010;5:69.
- Global Health Workforce Alliance. Global experience of community health workers for delivery of health related Millennium Development Goals: a systematic review, country case studies, and recommendations for integration into national health systems. Geneva: Global Health Workforce Alliance; 2010.
- Earth Institute. One million community health workers: technical task force report. New York: Earth Institute, Columbia University; 2011.
- Perry H, Crigler L, Hodgins S. Developing and strengthening community health worker programs at scale a reference guide and case studies for program managers and policy makers. Baltimore: Maternal and Child Health Integrated Program (MCHIP); 2014.
- UNICEF, World Health Organization. WHO/UNICEF joint statement: integrated community case management an equity-focused strategy to improve access to essential treatment services for children. New York: UNICEF/WHO; 2012.
- Patel V, Weiss HA, Chowdhary N, Naik S, Pednekar S, Chatterjee S, et al. Lay health worker led intervention for depressive and anxiety disorders in India: impact on clinical and disability outcomes over 12 months. *Br J Psychiatry*. 2011;199(6):459–66.
- Shinde S, Andrew G, Bangash O, Cohen A, Kirkwood B, Patel V. The impact of a lay counselor led collaborative care intervention for common mental disorders in public and private primary care: a qualitative evaluation nested in the MANAS trial in Goa, India. *Soc Sci Med*. 2013;88:48–55.
- Pagel C, Lewycka S, Colbourn T, Mwansambo C, Meguid T, Chiduzo G, et al. Estimation of potential effects of improved community-based drug provision, to augment health-facility strengthening, on maternal mortality due to post-partum haemorrhage and sepsis in sub-Saharan Africa: an equity-effectiveness model. *Lancet*. 2009;374(9699):1441–8.
- Morrison J, Tumbahangphe KM, Budhathoki B, Neupane R, Sen A, Dahal K, et al. Community mobilisation and health management committee strengthening to increase birth attendance by trained health workers in rural Makwanpur, Nepal: study protocol for a cluster randomised controlled trial. *Trials*. 2011;12(1):128–39.
- Lassi ZS, Haider BA, Bhutta ZA. Community-based intervention packages for reducing maternal and neonatal morbidity and mortality and improving neonatal outcomes (Review). *Cochrane Database Syst Rev*. 2010;(11):CD007754.
- Waiswa P, Peterson SS, Namazzi G, Ekirapa EK, Naikoba S, Byaruhanga R, et al. The Uganda Newborn Study (UNEST): an effectiveness study on improving newborn health and survival in rural Uganda through a community-based intervention linked to health facilities—study protocol for a cluster randomized controlled trial. *Trials*. 2012;13(1):1–16.
- Rahman A, Haq Z, Sikander S, Ahmad I, Ahmad M, Hafeez A. Using cognitive-behavioural techniques to improve exclusive breastfeeding in a low-literacy disadvantaged population. *Matern Child Nutr*. 2012;8(1):57–71.
- Kim MH, Ahmed S, Preidis GA, Abrams EJ, Hosseinipour MC, Giordano TP, et al. Low rates of mother-to-child HIV transmission in a routine programmatic setting in Lilongwe, Malawi. *PLoS One*. 2013;8(5):e64979.
- le Roux IM, Tomlinson M, Harwood JM, O'Connor MJ, Worthman CM, Mbewu N, et al. Outcomes of home visits for pregnant mothers and their infants: a cluster randomized controlled trial. *AIDS*. 2013;27(9):1461–71.
- Sando D, Geldsetzer P, Magesa L, Lema IA, Machumi L, Mwanyika-Sando M, et al. Evaluation of a community health worker intervention and the World Health Organization's Option B versus Option A to improve antenatal care and PMTCT outcomes in Dar es Salaam, Tanzania: study protocol for a cluster-randomized controlled health systems implementation trial. *Trials*. 2014;15:359.
- Glenton C, Scheel IB, Lewin S, Swingle GH. Can lay health workers increase the uptake of childhood immunisation? Systematic review and typology. *Trop Med Int Health*. 2011;16(9):1044–53.
- Jilcott SB, Ickes SB, Ammerman AS, Myhre JA. Iterative design, implementation and evaluation of a supplemental feeding program for underweight children ages 6–59 months in Western Uganda. *Matern Child Health J*. 2010;14(2):299–306.
- Kimani-Murage EW, Kyobutungi C, Ezech AC, Wekesah F, Wanjihi M, Muriuki P, et al. Effectiveness of personalised, home-based nutritional counselling on infant feeding practices, morbidity and nutritional outcomes among infants in Nairobi slums: study protocol for a cluster randomised controlled trial. *Trials*. 2013;14:445.

30. Rahman A, Iqbal Z, Roberts C, Husain N. Cluster randomized trial of a parent-based intervention to support early development of children in a low-income country. *Child Care Heal Dev.* 2009;35(1):56–62.
31. Yousafzai AK, Rasheed MA, Rizvi A, Armstrong R, Bhutta ZA. Effect of integrated curative stimulation and nutrition interventions in the Lady Health Worker programme in Pakistan on child development, growth, and health outcomes: a cluster-randomised factorial effectiveness trial. *Lancet.* 2014;384(9950):1282–93.
32. Marsh DR, Gilroy KE, Van de Weerd R, Wansi E, Qazi S. Community case management of pneumonia: at a tipping point? *Bull World Health Organ.* 2008;86(5):381–9.
33. Christopher JB, Le MA, Lewin S, Ross DA. Thirty years after Alma-Ata: a systematic review of the impact of community health workers delivering curative interventions against malaria, pneumonia and diarrhoea on child mortality and morbidity in sub-Saharan Africa. *Hum Resour Health.* 2011;9:27.
34. Amouzou A, Morris S, Moulton LH, Mukanga D. Assessing the impact of integrated community case management (iccm) programs on child mortality: review of early results and lessons learned in sub-Saharan Africa. *J Glob Health.* 2014;4:2.
35. Bennett S, George A, Rodriguez D, Shearer J, Diallo B, Konate M, et al. Policy challenges facing integrated community case management in Sub-Saharan Africa. *Trop Med Int Heal.* 2014;19(7):872–82.
36. Prost A, Colbourn T, Seward N, Azad K, Coomarasamy A, Copas A, et al. Women's groups practising participatory learning and action to improve maternal and newborn health in low-resource settings: a systematic review and meta-analysis. *Lancet.* 2013;381(9879):1736–46.
37. Aghajanian A, Mehryar AH, Ahmadnia S, Kazemipour S. Impact of rural health development programme in the Islamic Republic of Iran on rural-urban disparities in health indicators. *East Mediterr Heal J.* 2007;13(6):1466–75.
38. Giugliani C, Harzheim E, Duncan MS, Duncan BB. Effectiveness of community health workers in Brazil: a systematic review. *J Ambul Care Manage.* 2011;34(4):326–38.
39. Banteyerga H. Ethiopia's health extension program: improving health through community involvement. *MEDICC Rev.* 2011;13(3):46–9.
40. El Arifeen S, Christou A, Reichenbach L, Osman FA, Azad K, Islam KS, et al. Community-based approaches and partnerships: innovations in health-service delivery in Bangladesh. *Lancet.* 2013;382(9909):2012–26.
41. Smith S, Deveridge A, Berman J, Negin J, Mwambene N, Chingaipe E, et al. Task-shifting and prioritization: a situational analysis examining the role and experiences of community health workers in Malawi. *Hum Resour Health.* 2014;12:24.
42. Jaskiewicz W, Tulenko K. Increasing community health worker productivity and effectiveness: a review of the influence of the work environment. *Hum Resour Health.* 2012;10(1):38.
43. Sundararaman T, Ved R, Gupta G, Samatha M. Determinants of functionality and effectiveness of community health workers: results from evaluation of ASHA program in eight Indian states. *BMC Proc.* 2012;6 Suppl 5:O30.
44. Celletti F, Wright A, Palen J, Frehywot S, Markus A, Greenberg A, et al. Can the deployment of community health workers for the delivery of HIV services represent an effective and sustainable response to health workforce shortages? Results of a multicountry study. *AIDS.* 2010;24 Suppl 1:S45–57.
45. Datiko DG, Lindtjorn B. Health extension workers improve tuberculosis case detection and treatment success in southern Ethiopia: a community randomized trial. *PLoS One.* 2009;4(5):e5443.
46. Clarke M, Dick J, Zwarenstein M, Lombard CJ, Diwan VK. Lay health worker intervention with choice of DOT superior to standard TB care for farm dwellers in South Africa: a cluster randomised control trial. *Int J Tuberc Lung Dis.* 2005;9(6):673–9.
47. Hermann K, Van Damme W, Pariyo GW, Schouten E, Assefa Y, Cirera A, et al. Community health workers for ART in sub-Saharan Africa: learning from experience—capitalizing on new opportunities. *Hum Resour Health.* 2009;7(31):1–11.
48. Decroo T, Rasschaert F, Telfer B, Remartinez D, Laga M, Ford N. Community-based antiretroviral therapy programs can overcome barriers to retention of patients and decongest health services in sub-Saharan Africa: a systematic review. *Int Heal.* 2013;5(3):169–79.
49. Atkins S, Lewin S, Jordaan E, Thorson A. Lay health worker-supported tuberculosis treatment adherence in South Africa: an interrupted time series study. *Int J Tuberc Lung Dis.* 2011;15(1):84–9.
50. Mwai GW, Mburu G, Torpey K, Frost P, Ford N, Seeley J. Role and outcomes of community health workers in HIV care in sub-Saharan Africa: a systematic review. *J Int AIDS Soc.* 2013;16:18586.
51. Uwimana J, Zarowsky C, Hausler H, Jackson D. Training community care workers to provide comprehensive TB/HIV/PMTCT integrated care in KwaZulu-Natal: lessons learnt. *Trop Med Int Health.* 2012;17(4):488–96.
52. Aantjes C, Quinlan T, Bunders J. Integration of community home based care programmes within national primary health care revitalisation strategies in Ethiopia, Malawi, South-Africa and Zambia: a comparative assessment. *Glob Heal.* 2014;10(85):42–68.
53. Maes K, Kalofonos I. Becoming and remaining community health workers: perspectives from Ethiopia and Mozambique. *Soc Sci Med.* 2013;87:52–9.
54. Okwundu C, Nagpal S, Musekiwa A, Sinclair D. Home- or community-based programmes for treating malaria (review). *Cochrane Database Syst Rev.* 2013;(5).
55. Msyamboza KP, Savage EJ, Kazembe PN, Gies S, Kalanda G, D'Alessandro U, et al. Community-based distribution of sulfadoxine-pyrimethamine for intermittent preventive treatment of malaria during pregnancy improved coverage but reduced antenatal attendance in southern Malawi. *Trop Med Int Heal.* 2009;14(2):183–9.
56. Bojang KA, Akor F, Conteh L, Webb E, Bittaye O, Conway DJ, et al. Two strategies for the delivery of IPTc in an area of seasonal malaria transmission in the Gambia: a randomised controlled trial. *PLoS Med.* 2011;8(2):e1000409.
57. Tine RCK, Ndour CT, Faye B, Cairns M, Sylla K, Ndiaye M, et al. Feasibility, safety and effectiveness of combining home based malaria management and seasonal malaria chemoprevention in children less than 10 years in Senegal: a cluster-randomised trial. *Trans R Soc Trop Med Hyg.* 2014;108(1):13–21.
58. Das A, Friedman J, Kandpal E, Ramana GN V, Gupta RK D, Pradhan MM, et al. Strengthening malaria service delivery through supportive supervision and community mobilization in an endemic Indian setting: an evaluation of nested delivery models. *Malar J England.* 2014;13:482.
59. Prata N, Weidert K, Fraser A, Gessesew A. Meeting rural demand: a case for combining community-based distribution and social marketing of injectable contraceptives in Tigray, Ethiopia. *PLoS One.* 2013;8(7):e68794.
60. Asnake M, Henry EG, Tilahun Y, Oliveras E. Addressing unmet need for long-acting family planning in Ethiopia: uptake of single-rod progestogen contraceptive implants (Implanon) and characteristics of users. *Int J Gynaecol Obstet.* 2013;123 Suppl 1:e29–32.
61. Holanda Jr F, Castelo A, Veras TMCW, de Almeida FML, Lins MZ, Doris GB. Primary screening for cervical cancer through self sampling. *Int J Gynaecol Obstet.* 2006;95(2):179–84.
62. Hyoju SK, Agrawal CS, Pokhrel PK, Agrawal S. Transfer of clinical breast examination skills to female community health volunteers in Nepal. *Asian Pacific J Cancer Prev.* 2011;12(12):3353–6.
63. Wadler BM, Judge CM, Prout M, Allen JD, Geller AC. Improving breast cancer control via the use of community health workers in South Africa: a critical review. *J Oncol.* 2011;2011:150423.
64. Katabarwa M, Habomugisha P, Eyamba A, Agunyo S, Mentou C. Monitoring ivermectin distributors involved in integrated health care services through community-directed interventions—a comparison of Cameroon and Uganda experiences over a period of three years (2004–2006). *Trop Med Int Health.* 2010;15(2):216–23.
65. Omedo MO, Matey EJ, Awiti A, Ogutu M, Alaii J, Karanja DM, et al. Community health workers' experiences and perspectives on mass drug administration for schistosomiasis control in western Kenya: the SCORE Project. *Am J Trop Med Hyg.* 2012;87(6):1065–72.
66. Jenson A, Gracewello C, Mkocha H, Roter D, Munoz B, West S. Gender and performance of community treatment assistants in Tanzania. *Int J Qual Heal Care.* 2014;26(5):524–9.
67. Vouking MZ, Tamo VC, Mbuagbaw L. The impact of community health workers (CHWs) on Buruli ulcer in sub-Saharan Africa: a systematic review. *Pan Afr Med J.* 2013;15:19.
68. Das VNR, Pandey RN, Pandey K, Singh V, Kumar V, Matlashewski G, et al. Impact of ASHA training on active case detection of visceral leishmaniasis in Bihar. *India PLoS Negl Trop Dis.* 2014;8(5):1–5.
69. Winangnon S, Sriamporn S, Senarak W, Saranritichai K, Vatanasapt P, Moore MA. Use of lay health workers in a community-based chronic disease control program. *Asian Pac J Cancer Prev.* 2007;8(3):457–61.
70. Balagopal P, Kamalamma N, Patel TG, Misra R. A community-based participatory diabetes prevention and management intervention in rural India using community health workers. *Diabetes Educ.* 2012;38(6):822–34.
71. Nishtar S, Badar A, Kamal MU, Iqbal A, Bajwa R, Shah T, et al. The Heartfile Lodhran CVD prevention project—end of project evaluation. *Promot Educ.* 2007;14(1):17–27.



72. Bittencourt L, Scarinci IC. Is there a role for community health workers in tobacco cessation programs? Perceptions of administrators and health care professionals. *Nicotine Tob Res.* 2014;16(5):626–31.
73. Abanilla PKA, Huang K-Y, Shinnors D, Levy A, Ayernor K, Aikins A de-G, et al. Cardiovascular disease prevention in Ghana: feasibility of a faith-based organizational approach. *Bull World Health Organ.* 2011;89(9):648–56.
74. Vedanthan R, Kamano JH, Naanyu V, Delong AK, Were MC, Finkelstein EA, et al. Optimizing linkage and retention to hypertension care in rural Kenya (LARK hypertension study): study protocol for a randomized controlled trial. *Trials.* 2014;15(1):1–21.
75. Tsolekile LP, Puoane T, Schneider H, Levitt NS, Steyn K, Africa S, et al. The roles of community health workers in management of non-communicable diseases in an urban township. *Afr J Prim Heal Care Fam Med.* 2014;6(1):1–8.
76. Farzadfar F, Murray CJL, Gakidou E, Bossert T, Namdaritabar H, Alikhani S, et al. Effectiveness of diabetes and hypertension management by rural primary health-care workers (Behvarz workers) in Iran: a nationally representative observational study. *Lancet.* 2012;379(9810):47–54.
77. Cabral NL, Franco S, Longo A, Moro C, Buss TA, Collares D, et al. The Brazilian Family Health Program and secondary stroke and myocardial infarction prevention: a 6-year cohort study. *Am J Public Health.* 2012;102(12):e90–5.
78. Jafar TH, Islam M, Hatcher J, Hashmi S, Bux R, Khan A, et al. Community based lifestyle intervention for blood pressure reduction in children and young adults in developing country: cluster randomised controlled trial. *BMJ.* 2010;340(c2641):1–7.
79. Menon J, Joseph J, Thachil A, Attacheril TV, Banerjee A. Surveillance of noncommunicable diseases by community health workers in Kerala. *Glob Heart.* 2014;9(4):409–17.
80. Rahman A, Malik A, Sikander S, Roberts C, Creed F. Cognitive behaviour therapy-based intervention by community health workers for mothers with depression and their infants in rural Pakistan: a cluster-randomised controlled trial. *Lancet.* 2008;372(9642):902–9.
81. Kauye F, Chiwandira C, Wright J, Common S, Phiri M, Mafuta C, et al. Increasing the capacity of health surveillance assistants in community mental health care in a developing country, Malawi. *Malawi Med J Malawi.* 2011;23(3):85–8.
82. Jenkins R, Kiima D, Okonji M, Njenga F, Kingora J, Lock S. Integration of mental health into primary care and community health working in Kenya: context, rationale, coverage and sustainability. *Ment Health Fam Med.* 2010;7(1):37–47.
83. Ramos-Cerqueira ATA, Torres AR, Crepaldi AL, Oliveira NIL, Scazufca M, Menezes PR, et al. Identification of dementia cases in the community: a Brazilian experience. *J Am Geriatr Soc.* 2005;53(10):1738–42.
84. Nogueira EL, Rubin LL, Giacobbo S de S, Gomes I, Neto AC. Screening for depressive symptoms in older adults in the Family Health Strategy, Porto Alegre, Brazil. *Rev Saude Publica.* 2014;48(3):368–77.
85. Dias A, Dewey ME, D'Souza J, Dhume R, Motghare DD, Shaji KS, et al. The effectiveness of a home care program for supporting caregivers of persons with dementia in developing countries: a randomised controlled trial from Goa, India. *PLoS One.* 2008;3(6):e2333.
86. Chatterjee S, Naik S, John S, Dabholkar H, Balaji M, Koschorke M, et al. Effectiveness of a community-based intervention for people with schizophrenia and their caregivers in India (COPSI): a randomised controlled trial. *Lancet.* 2014;383(9926):1385–94.
87. Haines A, Sanders D, Lehmann U, Rowe AK, Lawn JE, Jan S, et al. Achieving child survival goals: potential contribution of community health workers. *Lancet.* 2007;369(9579):2121–31.
88. Prata N, Gessessew A, Cartwright A, Fraser A. Provision of injectable contraceptives in Ethiopia through community-based reproductive health agents. *Bull World Health Organ.* 2011;89(8):556–64.
89. Rasschaert F, Philips M, Van Leemput L, Assefa Y, Schouten E, Van Damme W. Tackling health workforce shortages in antiretroviral treatment scale-up—experiences from Ethiopia and Malawi. *J Acquir Immune Defic Syndr.* 2011;57(2):109–12.
90. Yitayal M, Berhane Y, Worku A, Kebede Y. Health extension program factors, frequency of household visits and being model households, improved utilization of basic health services in Ethiopia. *BMC Health Serv Res.* 2014;14:156.
91. Standing H, Chowdhury AMR. Producing effective knowledge agents in a pluralistic environment: what future for community health workers? *Soc Sci Med.* 2008;66(10):2096–107.
92. Dalglish SL, George A, Shearer JC, Bennett S. Epistemic communities in global health and the development of child survival policy: a case study of iCCM. *Health Policy Plan.* 2015;30(2):ii12–25.
93. Institute for Health Metrics and Evaluation. Financing global health 2014: shifts in funding as the MDG era closes. Seattle: IHME; 2015.
94. The Global Fund. Community systems strengthening framework. 2014.
95. UNAIDS. 90-90-90—an ambitious treatment target to help end the AIDS epidemic. Geneva: UNAIDS; 2014.
96. Sarriot E, Morrow M, Langston A, Weiss J, Landegger J, Tsuma L, et al. A causal loop analysis of the sustainability of integrated community case management in Rwanda. *Soc Sci Med.* 2015;131(2015):147–55.
97. Mangham-Jefferies L, Mathewos B, Russell J, Bekele A. How do health extension workers in Ethiopia allocate their time? *Hum Resour Health.* 2014;12:61.
98. Kok MC, Muula AS. Motivation and job satisfaction of health surveillance assistants in Mwanza, Malawi: an explorative study. *Malawi Med J.* 2013;25(1):5–11.
99. Javanparast S, Baum F, Labonte R, Sanders D, Heidari G, Rezaie S. A policy review of the community health worker programme in Iran. *J Public Health Policy.* 2011;32(2):263–76.

Submit your next manuscript to BioMed Central and we will help you at every step:

- We accept pre-submission inquiries
- Our selector tool helps you to find the most relevant journal
- We provide round the clock customer support
- Convenient online submission
- Thorough peer review
- Inclusion in PubMed and all major indexing services
- Maximum visibility for your research

Submit your manuscript at  
[www.biomedcentral.com/submit](http://www.biomedcentral.com/submit)





## From Community Health Workers to Community Health Systems: Time to Widen the Horizon?

Helen Schneider & Uta Lehmann

**To cite this article:** Helen Schneider & Uta Lehmann (2016) From Community Health Workers to Community Health Systems: Time to Widen the Horizon?, *Health Systems & Reform*, 2:2, 112-118

**To link to this article:** <http://dx.doi.org/10.1080/23288604.2016.1166307>



© 2016 The Author(s). Published with license by Taylor & Francis Group, LLC  
Helen Schneider and Uta Lehmann



Published online: 24 Jun 2016.



Submit your article to this journal [↗](#)



View related articles [↗](#)



View Crossmark data [↗](#)

## Commentary

# From Community Health Workers to Community Health Systems: Time to Widen the Horizon?

Helen Schneider\* and Uta Lehmann

School of Public Health and UWC/MRC Health Services to Systems Research Unit, University of the Western Cape, Cape Town, South Africa

### CONTENTS

#### Background

#### Systems Perspective on CHWs

#### What Is a Community Health System?

#### Less Recognized Actors in Community Health Systems

#### Implications of a Widened Focus for Health System

#### Strengthening

#### References

**Abstract**—Community health workers (CHWs) have reemerged as significant cadres in low- and middle-income countries and are now seen as an integral part of achieving the goal of universal health coverage (UHC). In international guidance and support, the emphasis is increasingly shifting from a focus on the outcomes of CHW-based interventions to the systems requirements for implementing and sustaining CHW programs at scale. A major challenge is that CHW programs interface with both the formal health system (requiring integration) and community systems (requiring embedding) in context-specific and complex ways. Collectively, these elements and relationships can be seen as constituting a unique sub-system of the overall health system, referred to by some as the *community health system*. The community health system is key to the performance of CHW programs, and we argue for a more holistic focus on this system in policy and practice. We further propose a definition and spell out the main actors and attributes of the community health system and conclude that in international debates on UHC, much can be gained from recognizing the community health system as a definable sphere in its own right.

### BACKGROUND

Community-based health cadres, from lay health volunteers to trained and accredited community health workers, are increasingly included as an important component in national health systems striving to achieve universal health coverage (UHC). Global thinking and guidance on health systems, grappling with the ongoing health workforce crisis, have steadily begun to recognize the developing evidence base demonstrating the contributions of community health workers (CHWs) to improved health outcomes and driven a resurgence of interest in formally accounting for CHWs in health systems.<sup>1,2</sup> Community-based strategies have become an integral part of maternal and child health, malaria, and HIV/AIDS programs in many low- and middle-income countries

Keywords: community health systems, community health workers, universal health coverage

Received 10 February 2016; revised 7 March 2016; accepted 10 March 2016.

\*Correspondence to: Helen Schneider; Email: hschneider@uwc.ac.za

Color versions of one or more of the figures in the article can be found online at [www.tandfonline.com/khsr](http://www.tandfonline.com/khsr).

© 2016 Helen Schneider and Uta Lehmann.

This is an Open Access article distributed under the terms of the Creative Commons Attribution-Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0/>), which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited. The moral rights of the named author(s) have been asserted.

(LMICs). In addition, despite mixed outcomes historically<sup>3,4</sup> and a variety of longstanding and emerging challenges,<sup>5</sup> a growing list of countries—among them Brazil, Ethiopia, Iran, Rwanda and Malawi—have successfully implemented CHW programs at scale. These and other countries' successes have helped tip the international consensus in favor of national CHW programs, as seen in the 2013 Third Global Forum on Human Resources for Health's statement that CHWs and other frontline primary health care workers "play a unique role and can be essential to accelerating MDGs [Millennium Development Goals] and achieving UHC."<sup>6</sup>

Over the last five years, there have been a number of high-profile reports published by the Global Health Workforce Alliance, the Earth Institute, and others, collating and comparing experiences across countries.<sup>7-10</sup> There is also a growing body of literature synthesizing current evidence and developing conceptual understandings on the design of national CHW programs and the processes of scaling up and integration into national health systems.<sup>11-17</sup> International consensus meetings convened by both the Global Health Workforce Alliance and the U.S. Agency for International Development<sup>6,18</sup> and the publication of a comprehensive guide<sup>19</sup> by the U.S. Agency for International Development's Maternal and Child Health Integrated Program have further enriched global conversations on the strengthening of CHW programs at scale.

## SYSTEMS PERSPECTIVE ON CHWS

A notable feature of these documents and processes is the shift in emphasis from the more established focus on technical roles, performance, and the immediate human resource issues (training, supervision, remuneration) facing CHWs to embrace a broader systems perspective on programs. As stated in the introduction to the Maternal and Child Health Integrated Program guide, "Large-scale public sector CHW programs are complex entities that require adapting a systems perspective to the national and local contexts."<sup>19</sup> Drawing on health system frameworks such as the World Health Organization's "building blocks" approach,<sup>20</sup> CHW programs are being presented not just as human resources but as a full-fledged *sub-system* of the primary health care and district health system.

Important implications emerge from approaching CHW programming from a systems perspective. First, CHW programs require a comprehensive approach to planning and design and should be integrated with the formal health system's approaches to service delivery roles and organization, financing, human resource, supply chain, information, and governance systems.<sup>12,13</sup> Secondly, CHW programs not only

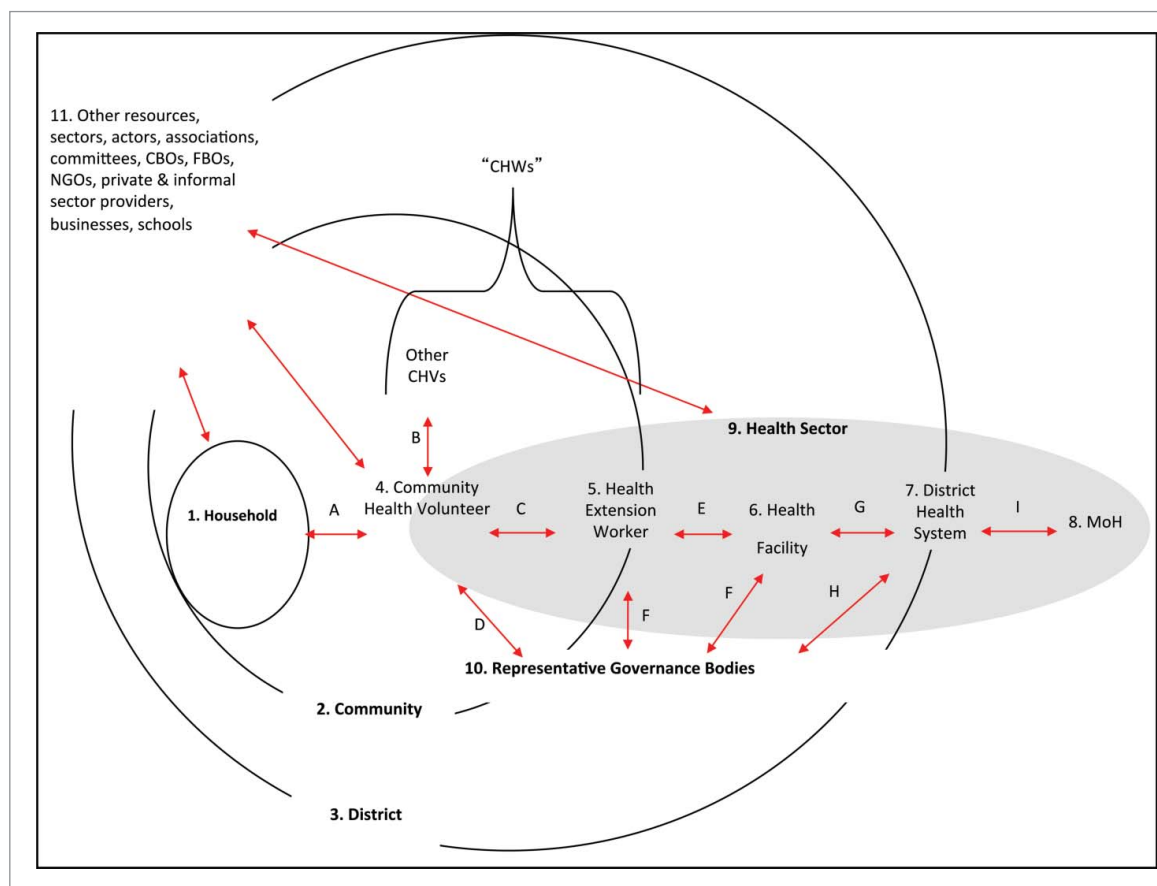
interface with the formal health system but also with "community systems" involving actors such as local political structures, civic groups, and faith-based organizations.<sup>17</sup> To realize their potential at scale, CHW programs need to be integrated into primary health care systems while being simultaneously embedded in and supported by communities.<sup>14,15,17</sup> Thirdly, these elements interact in complex and context-specific ways, making universal guidelines and prescriptions difficult to apply locally.<sup>21</sup>

Approaching CHW programs through a systems lens highlights that the attributes of the CHWs—their technical roles, skills, and motivation—only partly determine their performance. Further, though CHWs may be the most visible manifestation of health action within communities, health gains at this level involve a far greater array of community and health system factors than the CHW cadres themselves.

Despite this, the emphasis in accounts tends to remain narrowly focused on CHWs, often an officially designated cadre, such as health extension worker, health surveillance assistant, or lady health worker, with limited reference to the wider set of factors. Local health and community contexts of CHW programs are insufficiently characterized,<sup>22,23</sup> and the many other players with whom CHWs work in communities often remain invisible, such as the family caregivers in the AIDS-affected households of rural Uganda,<sup>24</sup> informal volunteers promoting child health in Mali,<sup>25</sup> or the local Buddhist temples mobilizing communities in Thailand.<sup>26</sup> Systemic approaches that would foreground the key relationships surrounding CHWs are inadequately developed.<sup>27</sup> Of these relationships, the interface with communities and community embeddedness are the most poorly understood.<sup>15</sup>

We believe that debates on community-based delivery to achieve universal health coverage could more properly reflect the emerging systems perspective, by widening the focus from a cadre to the *community health system* as a whole. Though formally designated CHWs may remain important elements of a community health system, widening the focus will encourage more systematic assessments of local contexts and designs that fit this context. It will also surface the "hidden" players<sup>25</sup> promoting the health of communities alongside CHWs. It will open up the possibility of forms of community health action not necessarily centered on a nationally recognized and accredited CHW cadre, such as the community mobilizations for tuberculosis control through local organizations in Odisha State, India<sup>28</sup> or the cardiovascular disease prevention programs through churches in urban Ghana.<sup>29</sup>

The concept of a community health system is not new. At a meeting of the US-based network the CORE Group in 2011, it was presented diagrammatically as a comprehensive set of



**FIGURE 1.** Representation of a Community Health System Source.<sup>30</sup> © 2011 CORE Group. Reproduced by permission of CORE Group. Permission to reuse must be obtained from the rightsholder. Available at <http://www.slideshare.net/COREGroup1/5102011-chws-on-the-move>

community-based health providers, bounded by local contexts and existing in relationship with households, health system, governance, and other community structures (Figure 1).<sup>30</sup>

It has since been developed into models of comprehensive community health system strengthening and applied in Ethiopia and Tanzania to mobilize community actors around diverse issues such as HIV testing and sanitation.<sup>31</sup> The Community Systems Strengthening Framework of the Global Fund for HIV, Tuberculosis, and Malaria has a similar approach, focusing on “key populations” and the multiple mechanisms for engaging these.<sup>32</sup> Though the idea of a community health system is held implicitly by many players in the field, and therefore is not necessarily new, we have not found any attempts to explicitly define or describe its elements in thinking on health systems.

### WHAT IS A COMMUNITY HEALTH SYSTEM?

We thus put forward a preliminary definition and highlight key features of a community health system. We describe

some often-overlooked community actors and conclude by spelling out the implications of a wider perspective for thinking about health system strengthening. In doing so, we have drawn on our knowledge and experience in South Africa, the African region, and beyond.

A community health system is the set of local actors, relationships, and processes engaged in producing, advocating for, and supporting health in communities and households outside of, but existing in relationship to, formal health structures.

The local actors in this system who engage in health action include some or all of the following:

- Household-level caregivers
- The array of formal, volunteer, and informal health providers working in communities
- Organizational intermediaries: nongovernmental organizations and other forms (religious, sport, youth, etc.) of associational life; workplaces
- Other government sectors: housing, education, social development, etc.

- Representative local health and political structures

These actors exist in relationship with each other, with households, and with the formal health system. Community health systems are not formal bureaucracies with vertical lines of command and control but social systems that contain both hierarchical and “horizontal” elements based on networking and reciprocity and relying on trust and acceptability. The relational ties forged in this system, referred to as *social capital*, are their most critical, if intangible, defining element.<sup>30</sup> These ties are enabled or constrained by local social norms, power structures (political, religious, economic, etc.), and the “collective capacity” of communities.<sup>33</sup> For example, local hierarchies of gender, caste, and generation significantly limited the ability of community-based distributors of family planning to provide accessible and equitable care in rural India.<sup>34</sup>

Health providers in community health systems, especially at the less formalized end of the spectrum, do not have the ready-made status of professionals. Those seeking a recognized role within it have to navigate the “gray zones” between a range of public, nongovernmental, and private actors.<sup>5</sup> Providers face different kinds of expectations, and meeting these depends not only on formal support from the health system (often considered as weak) but also on the ability to draw on social networks and other resources within communities. Intervening on health thus involves relational “work” and balancing a mix of role identities as belonging both to the community and the health system—as community insider, outsider, and broker.<sup>35</sup>

Further, though there are universally recognized organizational forms in health systems (hospital, primary health care system, professions etc.), community health systems are context specific. Regions and countries differ, as do individual communities, depending on their histories, economic and political systems, and prevailing cultural and social norms. These features (summarized in Table 1) make the governance of interventions to strengthen community health systems “complex and relational.”<sup>36</sup>

## LESS RECOGNIZED ACTORS IN COMMUNITY HEALTH SYSTEMS

Certain actors in community health systems are insufficiently recognized for their contributions. We have alluded to these and highlight them further below, while acknowledging that this is not a comprehensive inventory.

In the course of their evaluation of integrated community case management interventions in six African countries, Leon and colleagues<sup>25</sup> identified the significant role of

- Actors include the wide range of formal and informal health providers and volunteers, household caregivers, organizational intermediaries, other government sectors, and representative structures
- Health providers have mixed identities as belonging to both community and health system and have to meet expectations of both
- There is a relative absence of formal bureaucratic structures and relationships are based on networking and reciprocity, relying on trust and acceptability as well as the support of the formal health system
- Community health systems are context specific and are influenced by local histories, economic and political systems, and social-cultural norms
- The governance of interventions engaging the community health system is complex and relational

**TABLE 1.** Summary of the Key Features of the Community Health System

community health volunteers. In Mali, Niger, and Ethiopia, the formally designated CHWs (*agents de santé communautaire* and health extension workers, respectively), trained in integrated community case management interventions, were in effect a second tier of delivery, with a dense and semiformal system of volunteers (*relais* or health development army) providing a first tier of more regular interaction with households. These volunteers worked closely with the official CHWs but were seldom acknowledged or recognized as players. The authors refer to them as “hidden” actors and suggest that this volunteer mobilization may have been important to the child survival gains in these countries. Similar large-scale recruitment of health volunteers (more than 800,000 for a population of 66 million in 2008) has been described in Thailand’s primary health care system and considered a significant factor in health gains over the last decades.<sup>26</sup>

Extending into households, family caregivers, generally female, play a predominant role in contexts of high HIV burdens,<sup>24,37</sup> mental illness,<sup>38</sup> and disability,<sup>39</sup> also bringing into focus families and households and their functioning as a key dimension of community health systems.<sup>40</sup>

In the AIDS-affected countries of southern Africa, investments in community systems strengthening have created an “associational revolution”—the growth of a civil society organization sector, taking a wide variety of forms and acting as carers, advocates, and health promoters.<sup>41</sup> In South Africa this has been encouraged by a regulatory system registering nonprofit organizations and the contracting of home and community-based services through both health and social development sectors. The connectedness, ability to leverage

resources, and orientations (rights-based, religious, entrepreneurial, etc.) of organizations vary.<sup>42,43</sup> However, on the whole, they represent significant local social safety nets, mobilizing volunteer participation and acting as intermediaries. At the more formalized end of the spectrum, they have been contracted by government to employ and manage community health workers and thus form the main interface between the community health system and primary health care and district systems.<sup>44</sup>

Finally, local political structures were important enablers and gatekeepers in community-based initiatives in South Africa<sup>45</sup> and Uganda.<sup>46</sup> In Chhattisgarh State, India, engaging the village councils or *panchayats* was a key strategy in addressing social determinants of health such as food security and gender-based violence.<sup>47</sup>

### IMPLICATIONS OF A WIDENED FOCUS FOR HEALTH SYSTEM STRENGTHENING

The design of community-based interventions by policy makers, whether through the mechanism of CHWs or not, needs to be located within community health systems. It is important to map the full array of health actors in the community health system and the relationships between them. Some of these may fall under the “control” or influence of health system strengthening initiatives, whereas others do not. However, they will shape what can be achieved in communities and will therefore need to be understood and engaged. This, in turn, has implications for the mindsets and styles adopted by formal system players seeking to intervene in the community health system, who often start from the premise of command and control and are poorly prepared to work in a collaborative, networking mode of relationship.<sup>44,48</sup>

Secondly, holistic designs that aim to mobilize both community and health system support need to grapple with the intangibles of the local social and cultural context, including community capacity to act on health issues. Methodologies from the field of development such as asset mapping,<sup>49</sup> social network analysis,<sup>42</sup> and capacity assessment<sup>33,50</sup> provide techniques for understanding the context of community health systems. The success or failure of individual programs or cadres may have less to do with their skills, scope of practice, and training than on these contextual factors. Case studies and evaluations need to assess and report more fully on the contexts in which programs are implemented. The corollary of this is that community health systems are context specific, and though broad approaches and lesson learning across contexts is possible, overprescription is counterproductive.

Finally, in global debates and initiatives on universal health coverage and the sustainable development goals, much can be gained from recognizing the community health system as a unique and definable sphere in its own right. We have put forward a definition of this system that is open to refinement and further elaboration.

### DISCLOSURE OF POTENTIAL CONFLICTS OF INTEREST

No potential conflicts of interest were disclosed.

### REFERENCES

- [1] Lewin S, Glenton C, Daniels K, van Wyk B, Johansen M, Gn A, Zwarenstein M, Scheel I. Lay health workers in primary and community health care for maternal and child health and the management of infectious diseases (review). *Cochrane Libr* 2010; (3):CD004015.
- [2] Perry HB, Zulliger R, Rogers MM. Community health workers in low-, middle-, and high-income countries: an overview of their history, recent evolution, and current effectiveness. *Annu Rev Public Health* 2014; 35: 399-421.
- [3] Gilson L, Walt G, Heggenhougen K, Owuor-Omondi L, Perera M, Ross D, Salazar L. National community health worker programs: how can they be strengthened? *J Public Health Policy* 1989; 10(4): 518-532.
- [4] Berman PA, Gwatkin DR, Burger SE. Community-based health workers: head start or false start towards health for all? *Soc Sci Med* 1987; 25(5): 443-459.
- [5] Tulenko K, Mogedal S, Afzal MM, Frymus D, Oshin A, Pate M, Quain E, Pinel A, Wynd S, Zodpey S. Community health workers for universal health-care coverage: from fragmentation to synergy. *Bull World Health Organ* 2013; 91(11): 847-852.
- [6] Global Health Workforce Alliance. Joint Commitment to Harmonized Partners Action for Community Health Workers and Frontline Health Workers. Moving from fragmentation to synergy towards universal health coverage. Output from Third Global Forum on Human Resources for Health; November 9, 2013; Recife, Brazil.
- [7] Global Health Workforce Alliance. Global experience of community health workers for delivery of health related Millennium Development Goals: a systematic review, country case studies, and recommendations for integration into national health systems. Geneva: Global Health Workforce Alliance & World Health Organization; 2010.
- [8] Technical Task Force, Earth Institute. 1 Million community health workers: technical task force report. New York: Earth Institute, Columbia University; 2011.
- [9] Perry H, Zulliger R. How effective are community health workers? An overview of current evidence with recommendations for strengthening community health worker programs to accelerate progress in achieving the health-related Millennium Development Goals. Technical Report. Baltimore: Johns Hopkins Bloomberg School of Public Health; 2012.

- [10] Dahn B, Woldemariam A, Perry H, Maeda A, von Glahn D, Panjabi R, Merchant N, Vosburg K, Palazuelos D, Lu C, et al. Technical report. Strengthening primary health care through community health workers: investment case and financing recommendations. Geneva: Office of U.N. Secretary General's Special Envoy for Financing the Health Millennium Development Goals and for Malaria; 2015.
- [11] Liu A, Sullivan S, Khan M, Sachs S, Singh P. Community health workers in global health: scale and scalability. *Mt Sinai J Med* 2011; 78(3): 419-435.
- [12] McGorman L, Marsh DR, Guenther T, Gilroy K, Barat LM, Hammamy D, Wansi E, Peterson S, Hamer DH, George A. A health systems approach to integrated community case management of childhood illness: methods and tools. *Am J Trop Med Hyg* 2012; 87(5 Suppl): 69-76.
- [13] McCord GC, Liu A, Singh P. Deployment of community health workers across rural sub-Saharan Africa: financial considerations and operational assumptions. *Bull World Health Organ* 2013; 91(4): 244-253B.
- [14] Pallas SW, Minhas D, Perez-Escamilla R, Taylor L, Curry L, Bradley EH. Community health workers in low- and middle-income countries: what do we know about scaling up and sustainability? *Am J Public Health* 2013; 103(7): e74-e82.
- [15] Naimoli JF, Frymus DE, Wuliji T, Franco LM, Newsome MH. A community health worker "logic model": towards a theory of enhanced performance in low- and middle-income countries. *Hum Resour Health* 2014; 12(1): 1-16.
- [16] Zulu JM, Kinsman J, Michelo C, Hurtig AK. Integrating national community-based health worker programmes into health systems: a systematic review identifying lessons learned from low- and middle-income countries. *BMC Public Health* 2014; 14: 1-17.
- [17] Naimoli JF, Perry HB, Townsend JW, Frymus DE, McCaffery JA. Strategic partnering to improve community health worker programming and performance: features of a community-health system integrated approach. *Hum Resour Health* 2015; 13(1): 1-13.
- [18] Naimoli JF, Frymus DE, Quain EE, Roseman EEL. Community and formal health system support for enhanced community health worker performance: A U.S. Government evidence summit. Technical Report. Washington, DC: U.S. Agency for International Development; 2012.
- [19] Perry H, Crigler L, Hodgins S, Advisor T. Developing and strengthening community health worker programs at scale: a reference guide and case studies for program managers and policy makers. Baltimore: Jhpiego Corporation; 2014.
- [20] World Health Organization. Everybody's business: strengthening health systems to improve health outcomes. WHO's Framework for Action. Geneva: World Health Organization; 2007.
- [21] Lehmann U, Sanders D. Community health workers: what do we know about them? The state of the evidence on programmes, activities, costs and impact on health outcomes of using health workers. Technical Report. Geneva: World Health Organization; 2007.
- [22] Glenton C, Lewin S, Scheel IB. Still too little qualitative research to shed light on results from reviews of effectiveness trials: a case study of a Cochrane review on the use of lay health workers. *Implement Sci* 2011; 6: 1-5.
- [23] Kane SS, Gerretsen B, Scherpbier R, Dal Poz M, Dieleman M. A realist synthesis of randomised control trials involving use of community health workers for delivering child health interventions in low and middle income countries. *BMC Health Serv Res* 2010; 10: 1-7.
- [24] Kipp W, Tindyebwa D, Rubaale T, Karamagi E, Bajenja E. Family caregivers in rural Uganda: the hidden reality. *Health Care Women Int* 2007; 28(10): 856-871.
- [25] Leon N, Sanders D, Van Damme W, Besada D, Daviaud E, Oliphant NP, Berzal R, Mason J, Doherty T. The role of "hidden" community volunteers in community-based health service delivery platforms: examples from sub-Saharan Africa. *Glob Health Action* 2015; 8(27214): 1-7.
- [26] Treerutkuarkul A. Thailand's unsung heroes. *Bull World Health Organ* 2008; 86(1): 5-6.
- [27] Maes K, Closser S, Kalofonos I. Listening to community health workers: how ethnographic research can inform positive relationships among community health workers, health institutions, and communities. *Am J Public Health* 2014; 104(5): e5-e9.
- [28] Kamineni VVT, Wilson T, Satyanarayana N, Chauhan S, Singh L. A rapid assessment and response approach to review and enhance advocacy, communication and social mobilisation for tuberculosis control in Odisha state, India. *BMC Public Health* 2011; 11: 1-13.
- [29] Abanilla P, Huang K, Keng-Yen Shinnars D, Levy A, Ayenor K, de-Graft Aikins A, Ogedegbe O. Cardiovascular disease prevention in Ghana: feasibility of a faith-based organizational approach. *Bull World Health Organ* 2011; 89(9): 648-656.
- [30] Community Health Network. Hot topics, fresh insights, and ways forward. Meeting Report. Washington, DC: CORE Group; 2011. Available at <http://www.coregroup.org/resources/meetingreports/228-core-group-spring-meeting-2011> (accessed 11 January 2016)
- [31] Lunsford SS, Fatta K, Stover KE, Shrestha R. Supporting close-to-community providers through a community health system approach: case examples from Ethiopia and Tanzania. *Hum Resour Health* 2015; 13(1): 1-9.
- [32] Global Fund for HIV/AIDS, TB and Malaria. Community systems strengthening framework. Geneva: Global Fund for HIV/AIDS TB and Malaria; 2014.
- [33] Goodman RM, Speers MA, McLeroy K, Fawcett S, Kegler M, Parker E, Smith SR, Sterling TD, Wallerstein N. Identifying and defining the dimensions of community capacity to provide a basis for measurement. *Health Educ Behav* 1998; 25(3): 258-278.
- [34] Libby A, Luke N. Local hierarchies and distributor (non) compliance: a case study of community-based distribution in rural north India. *Health Care Women Int* 2011; 32(3): 225-242.
- [35] Mlotshwa L, Harris B, Schneider H, Moshabela M. Exploring the perceptions and experiences of community health workers using role identity theory. *Glob Health Action* 2015; 8(1): 1-9.
- [36] Lewin S, Lehmann U. Governing large-scale community health worker programs. In: Developing and strengthening community health worker programs at scale—a reference guide and case studies for program managers and policy makers, Perry H, Crigler L, Hodgins S, eds. Baltimore: Jhpiego Corporation; 2014;4.1-4.30.



- [37] Campbell C, Nair Y, Maimane S, Sibiya Z. Supporting people with AIDS and their carers in rural South Africa: possibilities and challenges. *Health Place* 2008; 14(3): 507-518.
- [38] Awadalla AW, Ohaeri JU, Salih AA, Tawfiq AM. Subjective quality of life of family caregivers of community living Sudanese psychiatric patients. *Soc Psychiatry Psychiatr Epidemiol* 2005;40(9): 755-763.
- [39] Das S, Hazra A, Ray BK, Ghosal M, Banerjee TK, Roy T, Chaudhuri A, Raut DK, Das SK. Burden among stroke caregivers: results of a community-based study from Kolkata, India. *Stroke* 2010; 41(12): 2965-2968.
- [40] Wouters E, Masquillier C, le Roux Booyens F. The importance of the family: a longitudinal study of the predictors of depression in HIV patients in South Africa. *AIDS Behav* 2016; 18 Jan 2016 [Epub ahead of print].
- [41] Kelly KJ, Birdsall K. The effects of national and international HIV/AIDS funding and governance mechanisms on the development of civil-society responses to HIV/AIDS in East and Southern Africa. *AIDS Care* 2010; 22(Suppl 2): 1580-1587.
- [42] Van Pletzen E, Zulliger R, Moshabela M, Schneider H. The size, characteristics and partnership networks of the health-related non-profit sector in three regions of South Africa: implications of changing primary health care policy for community-based care. *Health Policy Plann* 2014; 29(6): 742-752.
- [43] Moshabela M, Gitomer S, Qhibi B, Schneider H. Development of non-profit organisations providing health and social services in rural South Africa: a three-year longitudinal study. *PLoS One* 2013; 8(12): e83861.
- [44] Schneider H, Schaay N, Dudley L, Goliath C, Qukula T. The challenges of reshaping disease specific and care oriented community based services towards comprehensive goals: a situation appraisal in the Western Cape Province, South Africa. *BMC Health Serv Res* 2015; 15(1): 1-11.
- [45] Nxumalo N, Goudge J, Thomas L. Outreach services to improve access to health care in South Africa: lessons from three community health worker programmes. *Glob Health Action* 2013; 6: 19283.
- [46] Bagonza J, Kibira SPS, Rutebemberwa E. Performance of community health workers managing malaria, pneumonia and diarrhoea under the Community Case Management Programme in central Uganda: a cross sectional study. *Malar J* 2014; 13: 1-10.
- [47] Nandi S, Schneider H. Addressing the social determinants of health: a case study from the Mitaniin (community health worker) programme in India. *Health Policy Plann* 2014; 29 (Suppl 2): ii71-ii81.
- [48] Mishra A. "Trust and teamwork matter": community health workers' experiences in integrated service delivery in India. *Glob Public Health* 2014; 9(8): 960-974.
- [49] Burns J, Purdzynska D, Paz S. Participatory asset mapping: a community research lab toolkit. Los Angeles: Advancement City Project; 2012.
- [50] Cleary S, Schaay N, Botes E, Figlan N, Lehmann U, Gilson L. Re-imagining community participation at the district level: lessons from the DIALHS collaboration. In: South African health review, Padarath A, King J, English R, eds. Durban, South Africa: Health Systems Trust; 2015; 151-162.

### Annexure 3: Scoping review methodology

The review methodology followed broadly the steps proposed by Levac et al. (2010)<sup>1</sup>. HS and UL developed the scoping review questions (and coding schemes) based on previous literature reviews. After an initial search, the volume of new literature in recent years immediately became apparent. Since we were primarily interested in trends and patterns we decided to limit the scope of the search to the indexed literature, and focus on a ten-year period. In October 2015, we searched the following electronic databases through EBSCOHost: Academic Search Premier, Africa-Wide Information, CINAHL, PsycINFO, SocINDEX and MEDLINE, for all English language publications on CHWs, indexed from 2005 to 2014, and in countries defined by the World Bank as low- and middle-income (<http://data.worldbank.org/news/new-country-classifications-2015>). We also searched the Cochrane database for systematic reviews on CHWs.

Recognising the wide diversity of forms and titles of CHWs across the globe, we developed an inclusive list of search terms (Table 1). However, we deliberately excluded certain terms, such as traditional birth attendants and facility based lay counsellors, as these would have touched on significant other bodies of literature.

**Table 1: Search terms and inclusion/exclusion criteria**

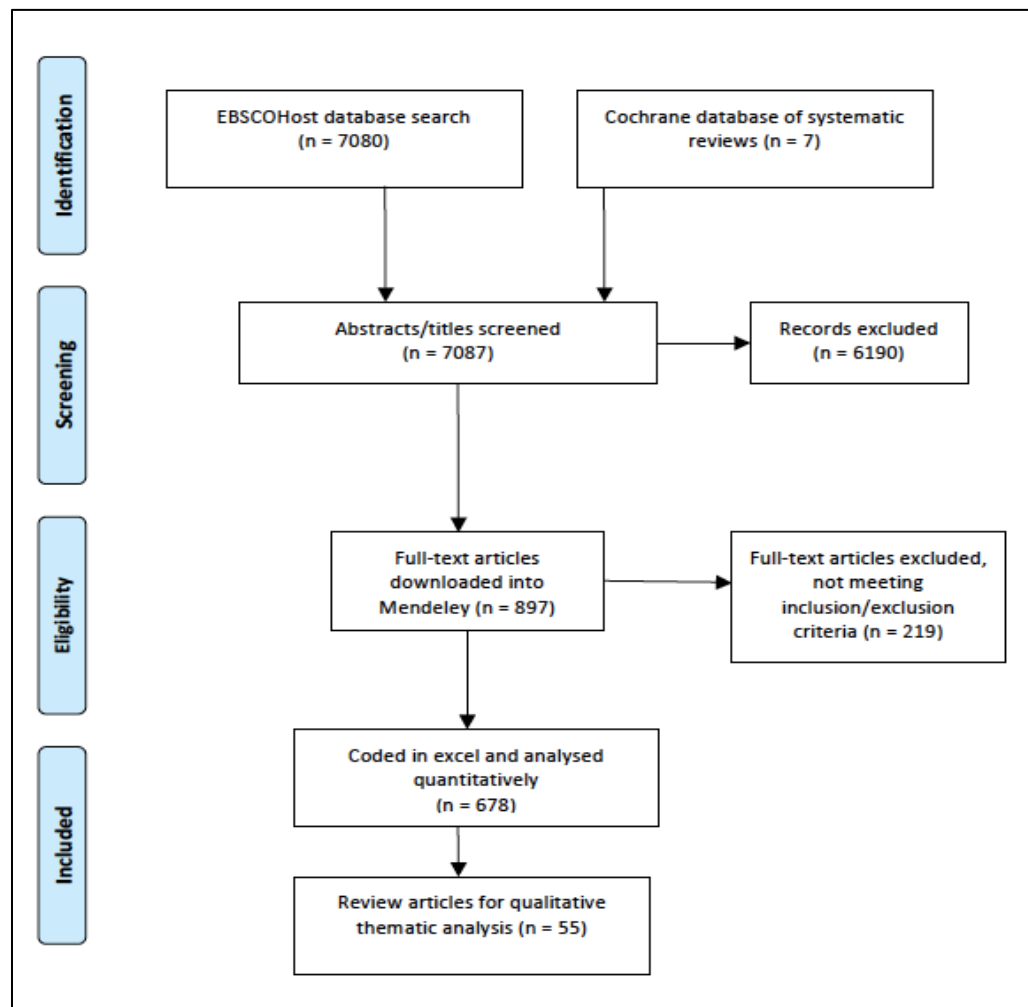
Search terms	"community health worker*" OR "volunteer health worker*" OR "lay health worker*" OR "lay health advisor" OR "lay health advisors" OR "lay health educator*" OR "village health worker*" OR "village health volunteer*" OR "lady health worker*" OR "community health volunteer*" OR "community health agent*" OR "community health promotion" OR "community health promoter*" OR "community health aide*" OR "health assistant worker*" OR "home based care" OR "home community based care*" OR "community health agent*" OR "health surveillance assistant*" OR "community care giver*" OR "community caregiver" OR "accredited social health activists" OR "asha" OR "mitanins" OR "mitanin" OR "family health team*" OR "family health program*" OR "integrated community case management" OR "ICCM"
Inclusion/ Exclusion criteria	English language publications Low- and middle-income countries Empirical findings, reviews, trial protocols, extended analyses, scientific

<sup>1</sup> Levac, D., Colquhoun, H. & O'Brien, K.K., 2010. Scoping studies: advancing the methodology. Implementation Science, 5(69), pp.2–9.

	letters and conference proceedings Not the following: Editorials, letters, short commentaries, news items Traditional birth attendants and traditional healers Facility based cadres, such as lay counselors Family care givers, peer supporters or counsellors, expert patients Community medicine retailers/sellers Community rehabilitation workers CHWs as field workers for research CHWs as a recommendations but not a focus of the findings Household surveys describing utilization of different providers, including CHWs
--	---

The search was conducted sequentially with all the EBSCOHost databases except MEDLINE searched together in the first step, followed by the search of MEDLINE in a second step. Each step yielded 5635 and 1445 hits respectively.

From October 2015 to January 2016 two authors (HS and DO) independently screened the titles and abstracts obtained in these searches, based on the inclusion criteria (Table 1). In this initial process we selected a total of 897 publications, which were entered in a database (Mendeley) and full texts downloaded. Entries were then independently coded by two authors (HS and DO) in an excel spreadsheet following the scheme outlined in Table 2. In an iterative process that involved removing publications that did not meet the inclusion criteria, and adding relevant publications identified in the sub-set of review papers, a final total of 678 publications was selected for analysis (Figure 1).



**Figure 1: Paper selection flow chart**

Coding relied on the abstract in the first instance, with further verification based on the full-length article, if the abstract was not sufficient. We categorized each entry into year of publication, country and region, and type of publication - empirical, review or “analysis”. Empirical pieces reported research findings (qualitative or quantitative), and reviews were formal appraisals of the literature based on an identifiable search strategy. Some papers used “review” in the title in a more colloquial sense, but were substantive reflections or commentaries, drawing on the literature, but not adopting a structured review strategy. We categorized these papers as “analyses”. Publications were also categorized by programmatic focus based on the conventionally accepted approaches (such as maternal-child health, malaria, reproductive health, comprehensive), drawing firstly, on the title and abstract, and if this was not stated by scanning the full-length paper for a description of CHW roles. We also noted the type of role such as treatment or prevention or both – performed by the CHWs. The coded items in the excel spread

sheet were imported into Stata (Version 14) for descriptive quantitative analysis. A qualitative, thematic analysis of key roles within each programmatic area was done, drawing on the sub-set of review and multi-country articles in the first instance, followed by reading of individual papers if the reviews were judged not sufficient.

**Table 2: Coding scheme for extracted papers**

Theme	Code
Programmatic focus	Maternal child health (MCH) HIV/TB Malaria Reproductive health Non-communicable diseases Mental health Other Comprehensive (two or more of the above)
Role	Treatment Prevention and promotion (including advocacy and social mobilization) Care, counseling, adherence Screening, referral, mediating access Two or more of the above